

DAILY METAL REPORTER

MONTHLY SUPPLEMENT

METALS

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In This Issue

PROSPECTS FOR SCRAP COPPER

By RITSON H. GRAVES
U. S. Metals Refining Company

STRATEGIC METALS IN U.S.

By S. H. WILLISTON, Vice President
Cordero Mining Company

BRITISH METAL MARKETS

By L. H. TARRING
London, England

DOMESTIC METAL MARKET REVIEW


WASHINGTON REPORT

METAL STATISTICS

DECEMBER
1960

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Two LINE Editorials

It would be easier for the average man to decide whether to sympathize with Nkrumah, Kasavubu or Lumumba if it were not so hard to remember which is which.

* * *

An official of the mint reports that nickels are becoming scarce. But not nearly as scarce as anything you can buy with one.

* * *

Anyhow, all the farmer's problems will be completely solved if they can get half of what was promised them in the candidates' pre-election campaigning.

* * *

It's strange how it always seems to surprise some of the Wall Street traders when the market shows that it can move down as well as up.

* * *

Mr. Krushchev says "There are no insoluble contradictions." But isn't Mr. K. an insoluble contradiction himself?"

BUSINESS IN MOTION

To our Colleagues in American Business ...

It has often been mentioned in these messages that in order to produce the best possible product at the least possible cost, it is a good idea to take your suppliers into your confidence...tell them your problems...seek their aid.

The following incident is a striking example of the advisability of doing just that.

The Dayton Precision Manufacturing Company, maker of the commutator you see illustrated, was having difficulties with the ferrous metal it was using for the hub; for not only did the rod from which the hubs were fabricated have to be drilled but it also had to be able to withstand a flanging operation. Their Chief Engineer decided to discuss this with one of Revere's Technical Advisors.

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the flanging operation...a set of manufacturing conditions where only brass, the right kind of brass, outshines all other metals and alloys.

The final score showed that the low first cost of the brass rod, plus the fact that it could be machined faster and more easily than ferrous metal, resulted

in a superior product at a saving in production cost. A further advantage was the added sales appeal of the brass hub.

There you have another example of how Revere in collaboration with the manufacturer's engineering department, helped "fit the metal to the job," which resulted in a better part at the least possible cost.

Revere, a supplier, is conscious that still other suppliers can often collaborate to help customers produce a superior product for less money.

And because almost every industry you can name is able to cite similar instances, we suggest that no matter what your suppliers ship you, it may pay you to take them into your confidence.



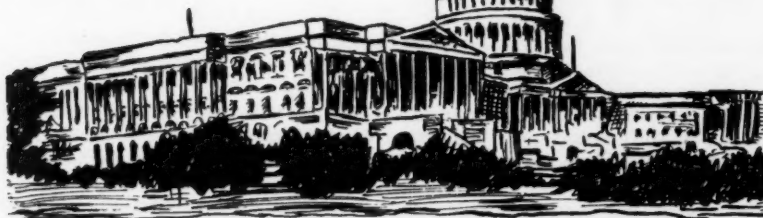
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Washington Report



November 21, 1960

WHEN the curtain comes up for the new Congress, a bill to aid the domestic lead and zinc mining industries will be on the stage. Rep. Ed Edmondson (Dem., Okla.), sponsor of a subsidy bill for small producers of both metals which ran into the roadblock of Presidential disapproval in the last session, indicated that he will present a similar proposal on the opening day of the incoming Congress. Prospects for enactment of such a bill are deemed favorable.

Indications that the new Administration will be friendly to such an approach were given by Rep. Stewart Udall (Dem., Ariz.), newly-named Secretary of Interior in an exclusive interview with **METALS**.

Rep. Udall noted that he had supported the Edmondson bill in the last Congress. This measure would have authorized subsidy payments based on the difference between market prices and a price of 17 cents per pound for lead and 14½ cents per pound for zinc to mines not producing more than 2,000 tons annually of each metal.

"This is certainly the direction in which we will move," Mr. Udall said in response to a question.

The Edmondson measure (H. R. 8860) was approved in the House by the narrow margin of 197 to 191 and passed the Senate by a 59 to 28 vote. Approval of the bill was withheld by President Eisenhower on the grounds that it would "intensify the industry's problems" and "frustrate programs now in effect that are generally bringing the production and demand" of lead and zinc into balance.

During the campaign Senator Kennedy declared that he would not have vetoed the Edmondson bill if he were President.

Asked to comment on the lead and zinc tariff situation Mr. Udall pointed out that the complexities of problems concerning foreign trade and thus foreign relations make a definite policy statement difficult. However the incoming Interior Secretary expressed "deep concern over the plight of the metals industry."

'Bicycle' Decision Effect

The question of lead and zinc tariffs came to the fore again when

the Supreme Court reaffirmed a lower court's ruling in the so-called "bicycle case" that the President is not permitted to modify changes that have been recommended by the Tariff Commission. The lower court held that under the existing law the President may either accept or reject, "but may not alter" remedies suggested by the Tariff Commission to help domestic industries hurt by imports.

Government officials are of the opinion that the bicycle case does not square on all fours with the lead-zinc quota situation. The bicycle case dates back to the summer of 1954 when the Bicycle Manufacturers Association of America complained to the Tariff Commission that rising imports of bicycles, due in part to a lowering of duty rates in 1947, were threatening serious injury to domestic manufacturers. The commission investigated and recommended that the 7½ per cent tariff on large-wheel lightweight bikes be raised to between 22½ per cent and 30 per cent of value under "escape clause procedure." President Eisenhower, however, did not want to boost the rate that high. He raised it to 11½ per cent in August, 1955.

Both the U. S. Customs Court in New York and Patent Appeals in Washington agreed with the complainants that the President had no authority to modify the Tariff Commission's recommendations.

Government officials point out that the lead-zinc import quotas were imposed on October 1, 1958 after Congress had enacted the Trade Agreement Extension Act of 1958. Section 6 of this Act provides for a procedure for overruling the President's recommendations if these recommend-

ations are "disapproved in whole or in part."

It is contended by Government officials that in enacting the legislation, Congress had in mind that the President might "disapprove in whole or in part" the Commission's recommendations. That is exactly what he did in lead and zinc. On April 24, 1958, the U. S. Tariff Commission in the report found that the industry was in need of protection, but three commissioners recommended maximum duties and also quotas while the other three recommended smaller duty increases and strongly opposed quotas.

President Eisenhower disregarded the recommendations on duties and imposed import quotas that were smaller than the three commissioners had recommended. The quotas went into effect on October 1.

Some lead and zinc producers did not agree with the government officials' contention that the quotas did not square with the bicycle case. It was pointed out, however, that it would be necessary to bring an action in the lower courts to test the legality of the President's action and that it probably would take 6 to 8 months before a decision was reached.

Sales From Stockpile

The General Services Administration announced plans to dispose of all of the 2,624 short tons of magnesium alloy scrap remaining in the national stockpile of critical and strategic materials.

The agency expects to offer, for competitive bids, approximately 551 short tons of the scrap every six weeks until the entire stockpile balance is sold.

The first sale will take place as soon as possible after the expiration of the six-month waiting period, required for all disposals from the national stockpile, probably in June, 1961.

Last year GSA announced its intention to dispose of a total of 3,075 short tons of excess magnesium scrap. This amount was reduced to the present balance of 2,624 tons by a sale in September, 1960, of 451 tons.

The scrap in stockpile was generated by demilitarizing incendiary bomb bodies.

Similar scrap sales are held by the Army Chemical Corps. The GSA sales will be coordinated with the Army disposal program to prevent any dislocation of the market.

Seek Offers on Zircon

GSA also reported that no ac-

(Continued on Page 13)

The Use of Scrap Copper Will Rise

By RITSON H. GRAVES, U. S. Metals Refining Company

WHEN the Primary Producer purchases scrap, without having handled and looked at every piece, he is in reality, taking a great risk both economically and reputation wise. Yet, most scrap is purchased by this method. The dealer advises xyz grade of scrap is shipped and is undoubtedly sincere in his belief that he has shipped what the refinery requires. At times the refinery differs with the advised grade and settlement becomes difficult. Actually, the refinery is only interested in purchasing material it can use for the purpose for which it was purchased.

When a truck load or carload of scrap arrives at the refinery, the refinery must check many things before having enough information to be sure of their own figures:

Has the truck or car been through a storm enroute? Has the scrap taken on water or dried out? It is not uncommon to have a difference of opinion as to what the weather has been during the trip. For its own protection the refinery keeps a constant record of what the weather has been at its location.

Has anyone tampered with the load or vehicle?

How was the material arranged on the truck? It is still not an uncommon occurrence to receive a load with No. 2 copper piled on top of No. 1 copper. If the No. 2 cannot easily be picked out of the No. 1, then some No. 1 is sure to be received as No. 2 and a misunderstanding can develop. If more than one lot is received in a covered truck or car which is piled high, humping or quick braking may change the location of material enough to cause tumbling and unavoidable mixing of grades when the truck is unloaded lot by lot from the rear forward.

When the shipment arrives, it is inspected and from what can be seen, is compared with the advice. It might be rejected at this early stage. As it is being unloaded, it is carefully examined by the inspector and all the men who are unloading it. We have had laborers discover a lead coating inside of No. 1 sheared tub-

ing. The dealer was amazed to find that what he was sure was a top grade of No. 1 actually was only No. 2. The dealer lost money on this shipment. If we hadn't discovered the lead, the refinery would have lost a fortune by producing a 300-400 ton heat which wouldn't have been saleable.

The most difficult task of any lot received by the refinery is obtaining a representative sample of that lot. For this job, the refineries have to depend on men with years and years of experience. They also must continually look many years into the future to make sure that they always have men with years of experience to do this work. The selection of these people by management soon enough, to leave the many years of training required before sampling responsibility is given to them, is one of the many secrets of operating a successful refinery scrap operation. Each lot must be so accurately sampled that it will satisfy the seller, but any inaccuracy which favors the seller will have a deleterious effect upon the profits of the buyer.

Changes in Receiving Methods

During the past five to eight years, the refiners have had to make many changes in receiving methods due partly to the ever increasing labor cost and partly to the constant switch from rail to truck transportation. As labor costs increased, the refinery either had to build railroad docks or depress tracks so that industrial trucks could enter box cars. Then the switch from rail to truck presented another problem which could only be solved by installing truck unloading docks. Then trucks increased in weight and size which forced the installation of larger truck scales. At the present time, on the east coast, two-thirds of all red metal scrap is being trucked. Because trucking allows the dealer to move his scrap more often, the result is smaller lots. This increases the refinery's costs as more samples must be taken, prepared and analyzed at many dollars per sample.

Sampling Difficult for Refinery

Sampling is the toughest job the refinery has to do. First, a large representative sample must be selected

from the lot and it must represent the lot. Next this sample must be separated into categories each of which must be weighed so that each separation will bear an accurate relation to the total. Each category must then be reduced to smaller pieces by shearing or some other means, so that any small portion of any one category is an accurate sample of that category. This is necessary because the final sample that is melted or matted down can only be a fraction of the many pounds of the original sample. It is also necessary to make sure that the reserve sample kept until after settlement, is the same as the sample actually run for settlement. None of this would be difficult if we were only dealing with two or three categories in a lot, but we have as high as thirty. For example, consider trying to get an accurate result on a car or truck load of obsolete telephones, with fifty varieties in the lot, plus thousands of component parts from other telephones, plus several old PBX boards — wood and all. It is almost axiomatic that the lower the grade of scrap, the more sampling costs.

The only simplification of this sampling problem from the refinery's viewpoints is less mixing and larger lots. We can't do much about it, but the dealer can help by trying to educate the original producer of the scrap. The days of sorting are over because we can't afford it and neither can the dealer. If you can reduce the mixing at the source, there is no sorting or sampling problem. There is some mixing taking place caused by the dealers due to packaging and shipping. I'm going to predict that some day, neither you nor we will be able to afford old drums for shipping containers. They will go to the steel mills where they belong. We could all save money right now if somehow we were forced to change to large containers which could be handled and dumped in a small fraction of the time required for drums.

Producers Preparation Methods

In the past, the refineries have done considerable sorting, briquetting, and shearing by alligator shear. This method is fast becoming too costly to continue. We cannot afford to sort. We cannot afford to shear by

Text of address presented before National Association of Secondary Material Industries on September 9 at Saranac Lake, N. Y.

alligator shear. We cannot afford to charge loose material into wirebar and anode furnaces.

Furnacing costs are getting so high we cannot afford to use material baled in a paper baler type machine, due to its low density.

Larger and Heavier Bales

To date, the refinery's only method of cutting costs has been the baling of loose material into larger and heavier bales. At Carteret we have followed the scrap steel industry by making two-ton bales under 5000 psi pressure. The higher the density of any scrap, the lower will be the plant distribution and furnace charging costs on reverberatory type furnaces. For scrap destined for smelter consumption, the refinery must still take the high distribution costs of light material because one of the secrets of operating a cupola is a porous charge.

Wirebar Furnacing

This is the operation which is causing more confusion today between dealers or producers of number one scrap and the refineries, than all the rest of red metal scrap business. It is my desire to at least make a dent in clearing up the misunderstanding regarding this problem. One would have to be a real genius to describe it in a manner which would cause unanimous agreement. However 99.5 per cent Cu just isn't necessarily No. 1 anymore! Anyway, here goes with what I know on the subject.

Now I know the question this raises. "How good must scrap be and what are the impurity limits to be called number one copper?" The answer is easy and is only one sentence, which is, "it must be good enough to produce copper that will stay sold or it must be as good as electrolytic cathodes. Now I know that answer is totally unsatisfactory, so let's examine a few of the details of my answer.

When a refinery produces wirebars, cakes or billets, it would be an oddity if the refinery knew who was going to get them and what would be made from them by the buyer. Most any kind of copper would make a good eave trough or No. 8 wire, but the copper we ship may be used to draw extremely fine wire. If it won't, we get it back. I think the point that should be stressed in considering impurities in copper is that a rather revolutionary change has taken place in quality requirements for copper wirebars in the past few years. Usage of copper for making film insulated magnet wire is an application that is growing very rapidly. It is imperative that this magnet wire not be springy

as it is for the most part used in automatic assembly operations where the part is defective if the wire is springy. Although the magnet wire field only accounts for a small percentage of the copper wire consumed, almost all of the wire mills produce this product and are very loathe to purchase any type of copper wirebar for their operation which could not readily be used to make magnet wire if they so desire.

I will cover a few of the major impurities which hamper the production of saleable finished copper and some non-technical reason why they must be held to a minimum by the refinery.

Bismuth

Of all the impurities which are damaging to copper, bismuth is probably the worst. The principle source of bismuth in copper scrap comes from being contaminated with low melting point alloys containing bismuth. Alloys such as Wood's metal are often used inside of thin tubing where sharp bends are desired. All of it can never be removed from the inner walls of the tube by the manufacturer and thus a secret bismuth contamination is completely concealed from the dealer and consumer. Depending upon the degree of thinness to which the copper is rolled, extremely minor amounts of bismuth will make the copper both hot and cold short, which means it is subject to cracking through failure along the grain boundaries during either hot or cold working. The result is rejected copper. The only satisfactory method of removing minor amounts of bismuth is by electrolytic refining.

Selenium

This is one of the major damaging impurities at a low concentration range to make copper unsatisfactory for the production of film insulated magnet wire. As the selenium content increases above a trace difficulty in grain size control and hardness control during annealing becomes increasingly worse and the copper may be rejected at this point. Selenium will also develop tendencies to edge tear cracks during hot working.

Tellurium

This impurity in general, has the same effect as selenium on copper but even more drastic. Annealing difficulties may be encountered at even a lower content than selenium. Copper containing tellurium may get by right up to the last manufacturing operation where drastic forming on thin sections may produce cracking. It is easy to understand how tellurium gets into copper scrap. Tellurium copper is extensively used in free cutting

copper alloys for screw machine work. Turnings from this operation are not discernible without benefit of a chemical analysis.

Lead

This is the most commonly encountered impurity which is picked up in copper scrap. Excessive lead in hot working, results in copper being hot short, which results in very severe intercrystalline cracking during rolling or working.

Tin

Although tin does not produce the consistent bad effects on copper as many other impurities, it does produce an unpredictable annealing and hardness behavior in copper.

Nickel

This impurity has two bad effects on copper, both of which require close control or the copper will be rejected. Nickel will reduce the conductivity but makes the copper stronger. For certain application this is desirable but it also contributes to making the copper springy and is therefore undesirable for film insulated magnet wire.

Silver

Silver in copper tends to raise the softening temperatures and is used commercially as an alloy addition for this specific purpose. However, when working with applications where softening temperature is a critical factor, the presence of silver as an impurity is undesirable.

The above-mentioned impurities can only be successfully removed from copper by electrolytic refining as it is virtually impossible to substantially effect the content in copper during fire refining.

Arsenic

The principle effect of arsenic in copper is the resulting drastic lowering of conductivity. It also makes copper springy for magnet wire applications.

Antimony

It has about the same effect on copper as arsenic although not quite so drastic.

Arsenic and antimony can be removed through fire refining if special techniques are used but normally to get them reduced to satisfactory low levels, electrolytic refining is used.

Other Impurities

Other impurities encountered in copper scrap such as iron, aluminum, magnesium, beryllium, phosphorous, boron, silicon, manganese and others can for the most part, be satisfactorily removed by fire refining. Excessive amounts of any of these impurities can result in making the fire refining operation lengthy, tedious

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and expensive to a degree where its use becomes uneconomical.

When you think in terms of copper plus one of the many impurities, your first question will be, well how much is too much of each of these impurities? Why can't maximum limits be set so we all will know what we are doing? It is very doubtful if you will ever get a correct answer to those questions because seldom if ever, are we only confronted with one impurity. Normally, there are several. You can not add the individual effects of these impurities and draw a conclusion because some combinations of them have a much greater deleterious effect on copper than the sum or total of all of the ones involved.

Anode Furnacing

The general idea that all copper scrap which isn't number one can be thrown helter skelter into the anode furnace just isn't true. There is still a lot of mystery attached to a lot of scrap. It is normal for the refinery to dilute the scrap as much as possible with his own or purchased blister. He also attempts by every known means, to spread the impurities over all heats because a uniform anode in physical and impurity characteristics is essential for proper electrolytic tank house operation. In addition to equalizing the impurities in anodes, there is also a limit to individual impurities and combinations of these impurities which can be tolerated and still produce a low impurity cathode. Therefore, when an impurity is of a magnitude which cannot be tolerated in the finished anode, the refinery has to resort to expensive refining in the anode furnace. This reduces the value of the incriminating scrap to the refinery, which is one of the main basic reasons why the refinery's prices for scrap has such wide variations.

Fire Refined Copper Furnacing

Some fire refined copper is equal to electro copper and some isn't. There just isn't any clear cut line which can be drawn between these two coppers. Supposedly, fire refined copper is used for foundry and casting purposes. When the finished product has served its purpose in our economy and is scrapped, who can tell the difference between it and electro, except by chemical analysis. This is also true of any machined scrap obtained from the original casting. The interchange of copper between countries, also adds to the confusion in the scrap field. It is a safe bet that the fire refined copper being produced today by the major American refineries is pretty good

copper, but who knows what the rest of the world is doing in this field? Remember that only some of the impurities can be removed by fire refining methods. This present metallurgical restriction therefore requires that scrap used in fire refined copper be practically of the same purity as the small amount now being added to electro.

Cupola or Blast Furnacing

This is the unit in the refinery where, according to the outside world, pure magic is supposed to occur. Supposedly, anything containing minor amounts of copper can be thrown into this animal along with a little coke and out comes pure copper from one spout and an absolutely barren slag from the other spout. You also are supposed to obtain clean zinc oxide from the flue gas it produces. None of these of course, are true. The only magic performed in the operation of a cupola is by the operator trying to keep it operating at a profit.

Operating a blast furnace on what the market provides today requires magic. It wasn't too bad in the old days when the brass was high in copper and low in iron, slags were self fluxing and skims were larger than dust. Many conditions are required to successfully operate a cupola.

The charge must be porous enough to allow the blast to permeate the charge. Fines must be prepared by sintering or some other means of agglomeration to satisfy this requirement.

Enough coke must be added to reduce the copper, keep the furnace hot, the slag hot enough to flow and yet be low enough in copper to throw away. Yet the amount of coke added must be kept low enough to allow as much zinc tin and lead as possible to be oxidized and pass out the flue to a collector. Also iron and other major slag forming impurities must be oxidized. Thus, we must have reduction and oxidation in the same place at the same time.

Today it is difficult to operate a cupola at a profit because: the copper content of procurable blast furnace scrap is constantly on the down grade. Some of this is due to high priced copper bringing out marginal scrap. This results in a higher slag fall carrying a larger percentage of the total copper involved to a waste product.

Lower zinc tin and lead contents of scrap and higher impurities reduces the value of the dust obtained. The plastic used today for insulation purposes in electronic scrap produces chlorides in the dust which also re-

duces its value. At present the demand for cupola flue dust at the price offered makes it almost worthless. Low zinc prices and impurities magnify this situation.

Under today's prevailing conditions, cheaper methods of cupola operation will have to be found or the margin of the refinery will have to be increased. Considerable headway is being made in the mechanization of cupola operation and control.

Insulated Wire

A combination of plastic for insulation and air pollution control regulations is fast making this item one to be feared. Fortunes have already been spent on installations for the consumption of this product. None to date have been completely satisfactory. They all have high labor operating costs, or high maintenance cost, or produce some smoke, or produce an intolerable odor or a combination of these faults. The mechanical or chemical methods of separation tried so far have all been too costly. Until some one develops a better method the costs of retrieving this copper will remain several dollars higher than the old open field burning method, and yet we know that open field burning is a thing of the past or soon will be.

Future of Scrap

As time has proven, two situations and their future are very clear to me:

Regardless of how many new copper mines are opened, or how much more efficient the old ones are operated, the ratio of available scrap to virgin material must increase. If you look far enough into the future, you can actually visualize that the time will come when scrap will have to satisfy the major portion of the world's demand for copper. I suppose there never will come a time when it will all be mined out, but there may come a time when the cost of mining will be greater than our economy will allow. Therefore, it is my judgment that the scrap copper business will increase indefinitely.

Unless something is done to prevent it, the product we all call num-one copper is going to disappear. At least once a week one reads about some new and fantastic alloy which has been discovered to advance our fast moving economy. Many of these alloys are copper with one or several things added to it. You name a metal or an alloy and someone has tried, or are now trying, or will try very soon to add it to copper to produce a new alloy for some purpose. These new alloys will all be worked in the

(Continued on Page 13)

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U.S. Strategic Metals Industry

By S. H. WILLISTON, Vice President, Cordero Mining Company

THE STRATEGIC metal industry in the United States has reached, or will reach in the next few months, the production levels of 1939. We are again the 'have not' nation in strategic metals that we were before World War II.

At one time or another during the last twenty years we have produced up to 100 per cent of our annual mercury requirements, up to 50 per cent of our antimony requirements, roughly 15 per cent of our chrome and manganese requirements, 200 per cent of our tungsten requirements, and 50 per cent of our cobalt requirements. It cannot be said, in the light of these facts, that we do not have the deposits to mine.

As it so happens, deposits of these strategic metals are relatively abundant in some of the lower labor cost countries in the world. Thus, chrome, cobalt, antimony, beryl, columbium, manganese and tungsten come from countries such as Africa, Turkey, Brazil, Bolivia, Red China and India, where the total wages per day are far less than the cost of the American miner per hour, and the types of deposits are such that the efficiency of labor in these countries is fully equal to the efficiency of the American miner. Thus, in the United States labor costs in strategics range from 500 per cent to 5000 per cent of foreign labor costs. Further, when, as, and if technical experts or American technical equipment are necessary our own government has been quite willing to assist the foreigner in acquiring that knowledge and machinery.

While many of the manufacturers of finished goods in the United States enjoy tariff rates ranging as high in some cases as 50 per cent ad valorem, or even higher, tariffs on the strategic metals are either non-existent, as in the case of chrome, cobalt and columbium, or extremely low (less than 10 per cent) such as the case in respect to antimony, manganese and mercury. Of all the strategics only tungsten has a tariff in excess of 10 per cent, and it is interesting to note

that only tungsten is showing a slightly improved production figure at the present time.

These two reasons clearly explain the almost complete elimination of the strategic mining industry. There is, however, a contributing cause which is most difficult to understand, and that is the apparent policy of our government in Washington to permit the complete elimination of this industry so long as the cold war continues. You may recall that at the end of World War II a strategic mineral policy was proposed that we leave our minerals in the ground and procure them from unfriendly foreign nations. That proposal was never officially adopted and the man who made it came to an ignominious and tragic end, yet, at the present time, that policy has been apparently firmly established as the underlying strategic mineral policy of the United States.

Where, except in the strategics, are metals repeatedly taken from the military stockpile without Congressional approval and without published Presidential permission?

Where, except in the strategics, do government agencies use barter for the procurement of their current requirements?

Where, except in strategics, are government agencies' requirements acquired 90 per cent from abroad at prices no lower than domestic, and without giving domestic producers an opportunity to bid?

Where, except in the strategics, are government import figures falsified?

Where, except in the strategics, are barter contracts entered into after announcement that our stockpiles are full to overflowing?

It might be wise for producers of other metals to examine the precedents set by government action in the strategics. They could prove disastrous to other industries beside our own.

The present situation as to the individual strategics is as follows:

Antimony

Domestic production of antimony is limited to by-product metal from Idaho which accounts for about 5 per

cent of domestic antimony requirements. Antimony in the ore is worth about 13c a pound, as the metal, about 26c a pound, and the ad valorem tariff is less than 5 per cent. Our present supply of antimony comes from Mexico, Red China, South Africa and Bolivia.

Cobalt

The only primary cobalt producer in the United States has closed down. The refining equipment and mining plant machinery has been sold. World cobalt prices have declined materially and even the Canadian cobalt producers announced that they will be unable to continue operations. Although there is some by-product production in the United States, the principal source of cobalt for consumption in the United States is now the Congo and Castro's Cuba. Cobalt is on the free list.

Chromite

Domestic production of chromite is limited to the Mout Montana operations of American Chrome on a government contract which expires in 1961. Metallurgical investigations, looking toward the production of ferro-chrome, are reported as satisfactory, but the recent decline in imported chrome ore prices must make continued operation considerably less than certain.

Metallurgical grade chrome production on the West Coast and in Alaska ceased in 1958. These chrome mines are no longer on a stand-by basis but are closed and caved. Little of the reserves developed are now available.

Chrome in the ore is worth approximately 3c a pound, as ferro-chrome it is worth 30c a pound, and as electrolytic chrome metal a little over \$1 a pound.

United States' requirements of chrome come from Turkey and the East Coast of Africa. Chrome is on the free list.

Columbium

The only producer of appreciable amounts of columbium, Porter Brothers in Idaho, discontinued mining operations in early 1960. Columbium in the ore is worth less than \$2 a pound but, as the metal, is worth

(Continued on Page 13)

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NATIONAL BUSINESS PRESS

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Washington Report

(Continued from Page 5)

ceptable bids had been received for 8,266 tons of baddeleyite, 6,228 tons of zircon sand and 1,723 tons of zirconium-bearing material which were offered for sale on November 30, 1960. All three materials are used for foundry facings, for refractories and in the production of zirconium metal.

The agency will now consider offers for the purchase of these materials on a negotiated basis. These offers must be received by the Director, Project Administration Division, GSA's Defense Materials Service, Washington 25, D. C., until the close of business on February 28, 1961.

Value of Stockpiles

The cost value of materials in 9 federal stockpile inventories as reported by the Agriculture Department, General Services Administration, Office of Civil and Defense Mobilization, and Department of Health, Education, and Welfare, on October 31, 1960, totaled \$16,176,103,000, according to an announcement by the Joint Committee on Reduction of Nonessential Federal Expenditures. October activity in this stockpile resulted in a net increase of \$173,720,000.

Strategic and critical materials are shown in six inventories totaling \$8,600,000,000, including the \$6,100,000,000 national stockpile for which itemized detail is classified. Combined figures from the other five inventories show materials (in all grades and forms) leading in cost value as follows:

Aluminum, bauxite, etc., with 7,100,000 tons at a cost of \$486,000,000;

Tungsten, with 84,000,000 pounds at a cost of \$341,000,000; and

Manganese (and ores), with 4,900,000 tons at a cost of \$325,000,000.

Barter Value Declines

The U. S. Department of Agriculture reported that barter contracts valued at \$15,200,000 were negotiated by the Commodity Credit Corporation in the July-September quarter compared with \$64,900,000 negotiated in the preceding quarter and \$34,400,000 negotiated in the July-September quarter the preceding year.

Barter contracts provide for the exchange of CCC-owned agricultural commodities for strategic and other materials, on an equivalent-value basis.

Agricultural commodities exported by barter contractors during the July-September 1960 period had an export value of \$26,600,000. This compares with barter exports of \$34,400,000 in the preceding quarter and barter exports of \$53,200,000 in the July-September 1959 quarter.

Materials delivered to CCC by contractors in the July-September 1960 period had a value of \$38,500,000 compared with \$36,700,000 in the preceding quarter and \$50,200,000 in July-September period the preceding year. As of September 30, 1960, strategic materials acquired through barter and held in CCC inventory pending transfer to the stockpiles were valued at \$89,100,000.

Strategic Metals

(Continued from Page 11)

\$50 a pound. United States' requirements of columbium comes from Brazil and Africa. Columbium is on the free list.

Manganese

Domestic production of manganese has declined drastically since the termination of the government purchase program. A small amount of battery manganese and special-purpose manganese is being produced in Montana. The Three Kids operation in Nevada is still operating but will not continue beyond the middle of next year. Current United States' requirements of manganese come from Brazil, India, and Africa. Manganese in the ore is worth approximately 3c a pound and, as electrolytically reduced metal, slightly over 30c a pound. Tariff protection is considerably less than 10 per cent.

Mercury

As a result of lowered prices mercury production in the United States dropped 20 per cent during 1959 and will probably decline another 20 per cent in 1960. World-wide production has also declined materially in the last two years for the same reason. Domestic production is able to supply almost half of domestic commercial requirements, the balance coming from Mexico, Italy and Spain. Tariff protection is less than 10 per cent.

Tungsten

Two primary producers of tungsten, as well as one by-product producer, are in operation, and two additional mines have announced reopening. Since the Bureau of Mines has discontinued production statistics on tungsten, and since the producing picture is subject to change without

much notice, accurate estimates are difficult to make. It is, however, rather certain that United States production is in excess of one-fourth our consumption requirements but not as much as half our requirements. While the world price of tungsten has improved materially in the last year or so from its extreme low point, domestic costs have continued to rise so that present tungsten prices cannot bring forth much more tungsten production than that now in operation or considering operation. The balance of United States tungsten requirements comes from Australia, Korea, Brazil, Red China, Bolivia and Africa. Tungsten is the only strategic metal which has an import duty in excess of 10 per cent ad valorem.

Scrap Copper

(Continued from Page 9)

same shops where pure copper is used. The result will be mixing and the virtual elimination of a pure copper scrap lot unless we all do something to prevent it. The refineries are already trying to educate the fabricators, with whom they are doing toll business, along these lines. We believe that a consistent and concerted effort by the dealers along these same educational lines can save number one copper. We also believe that this educational program should include the teaching of the policy of segregation at the source for all scrap classifications.

Use of Antimony Metal in 1960 Showed Slight Dip

Washington — A rise in both primary and secondary smelter production, imports, exports, and stocks, and a slight reduction in mine production and consumption of primary metal, characterized the antimony industry in 1960. No Government purchases were made for the strategic stockpile; barter contracts, however, were executed by the Commodity Credit Corporation to obtain antimony for the supplemental stockpile. Domestic mine production of antimony in 1960 was 650 short tons, according to preliminary tabulations of the Bureau of Mines, United States Department of the Interior. This was a decline of 28 tons from the 1959 output and was recovered in the form of impure cathode metal as a by-product of the processing of silver-lead ores by the Sunshine Mining Company of Idaho.

TECHNICAL POSITION ACCOUNTS FOR STRENGTH IN LONDON COPPER MARKET; SPOT SUPPLIES TIGHT

Tin Situation Shows Little Change and Prices Move in Narrow Range;
Lead Picture Held Somewhat Somber; Slight Easing Reported in Zinc

December 8, 1960

RATHER contrary to earlier expectation, the London copper market had a firmer tone during November, prices moving up from around £220 at the earlier part of the month to the current level of about £234 for cash. This rise in prices has been accompanied by the development of a backwardation, despite a rising trend of stocks in official London Metal Exchange warehouses. These rose from about 10,450 tons at the end of October to nearly 13,000 tons, although the past week saw a small reduction from this figure.

The technical position here is interesting at the moment, and accounts for this apparently rather surprising development of prices. Some three months ago a good deal of forward buying was done by representative producers, apparently

COPPER

U. K. stocks of refined copper at the end of September, according to the British Bureau of Non-Ferrous Metal Statistics, showed a further increase at 93,460 tons compared with 89,809 tons a month earlier. Blister stocks, however, showed a decline at 16,840 tons (20,785 tons). Of the refined stocks consumers held 41,188 tons compared with 42,195 tons at the end of August. Production of refined copper in September was 12,959 tons of primary and 10,604 tons of secondary compared with 9,076 tons and 8,020 tons respectively in August. Consumption of copper in September was substantially higher at 65,748 tons (49,100 tons a month earlier). Details are as follows:

Unalloyed	Sept. 1960	—Jan.—Sept.— 1959 1960
Copper Products		
Wire*	23,962	161,685 200,966
Rods, bars and sections	2,101	14,079 15,665
Sheet, strip and plate	6,543	42,159 46,188
Tubes	6,721	47,794 53,619
Castings and misc.	650	5,850 5,850
Alloyed		
Copper Products		
Wire	1,854	12,978 15,645
Rods, bars & sections	14,918	99,587 122,327
Sheet, strip and plate	10,537	73,894 87,206
Tubes	1,903	15,836 16,906
Castings and misc.	8,083	53,959 65,293
Copper sulphate	2,040	25,805 21,321
Total all products	79,312	553,726 650,986
Copper content of output	65,748	451,664 535,774
Consumption of refined copper†	48,621	339,590 407,307
Consumption of copper and alloy scrap‡ (copper content)	17,127	112,074 128,467

* Consumption of H. C. copper and cadmium copper wire rods for wire and production of wire rods for export.

† Virgin and secondary refined copper.

‡ Consumption of copper in scrap is obtained by the difference between copper content of output and consumption of refined copper, and should be considered over a period since monthly figures of scrap consumption are affected by variations in the amount of work in progress.

By L. H. TARRING
London, England

with the aim at that time of preventing prices from slipping back too rapidly from the £240 level. Now that the contracts are falling due, and metal has to be delivered, it is found that supplies of spot copper on the London market are none too plentiful. It is anticipated that most of the metal will be taken up and held, at any rate for the time being, though probably some of it will be lent back to the market should there be any threat of a serious stringency in supplies. It is believed that some of the other metal on warrant was put there by consumers in an attempt to re-create a contango, and much of this is also not readily available for ordinary market operations.

Considering the very disappointing level of United States consumption, with apparently no immediate pros-

ZINC

According to the British Bureau of Non-Ferrous Metal Statistics, U. K. stocks of zinc at the end of September fell to 52,717 tons from the previous month's figure of 53,584 tons. Of these stocks consumers held 20,697 tons (21,871 tons). Production of zinc in September rose to 6,472 tons from the August figure of 5,022 tons. Consumption showed a substantial increase at 33,163 tons compared with 25,764 tons a month earlier. Details are given below:

	Sept. 1960	—Jan.—Sept.— 1959 1960
Brass	11,275	78,108 92,922
Galvanizing	8,498	70,778 73,903
of which:		
General	3,188	24,895 26,256
Sheet	1,937	17,905 17,587
Wire	1,971	14,814 16,726
Tube	1,402	13,254 13,034
Rolled zinc	2,409	17,544 18,712
Zinc oxide	2,406	20,974 19,914
Zinc diecasting and forming alloy	6,348	40,055 49,407
Zinc dust	1,309	8,572 9,744
Miscellaneous uses	918	8,115 8,497
Total all trades	33,163	244,146 273,099
Of which:		
Slab zinc		
High purity (99.99%)	6,882	43,386 54,126
Electrolytic & high grade (99.95%)	5,221	45,732 50,114
G.O.B. and Prime Western and debased	12,258	89,799 99,549
Other virgin material	251	1,833 1,894
Remelted zinc	571	4,242 4,987
Scrap—zinc (content) zinc metal, alloys and residues	3,026	24,246 23,832
Brass and other copper alloys	4,954	34,908 38,597

TIN

According to the British Bureau of Non-Ferrous Metal Statistics U. K. production of tin in September rose to 2,730 tons of primary and 22 tons of secondary from the previous month's figures of 1,907 tons of primary and 18 tons of secondary. Stocks showed a slight decline at 11,550 tons (11,771 tons the previous month), of which consumers held 1,328 tons (1,405 tons). Tin consumption in September showed an increase at 1,983 tons against 1,696 tons a month earlier. Details are as follows:

	Sept. 1960	—Jan.—Sept.— 1959 1960
Tinplate	952	7,338 8,521
Tinning:		
Copper wire	43	405 362
Steel wire	12	77 84
Other	74	586 609
Total	129	1,067 1,055
Solder	193	1,657 1,528
Alloys:		
Whitemetal	268	2,231 2,222
Bronze and gunmetal	213	1,528 1,829
Other	41	319 350
Total	522	4,078 4,401
Wrought Tin*		
Foil and sheets	31	229 211
Collapse tubes	27	168 202
Pipes, wire and capsules	4	28 26
Total	62	425 439
Chemical and other uses†	125	1,058 1,131
Total all trades	1,983	15,623 17,075

* Includes Compo and "B" metal.

† Mainly tin oxide and tin compounds.

METALS, DECEMBER, 1960

AVERAGE BRITISH PRICES FOR COPPER, TIN, LEAD, ZINC

(Per Long Ton)

Mean of Bid and Asked Cash Quotation at Close of Morning Session on London Metal Exchange

	COPPER			TIN			LEAD			ZINC		
	Cash	3 Months	Settlement	Cash	3 Months	Settlement	Current Month	3rd Following	Current Month	3rd Following	Current Month	3rd Following
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1960												
January	259 5 3	246 8 9	259 12 0	791 7 6	787 11 0	791 14 0	74 15 8	74 10 6	94 11 5	91 14 11		
February	263 17 5	245 17 6	264 5 0	792 7 5	790 3 10	792 15 8	73 17 3	73 15 6	88 17 2	88 18 5		
March	253 5 4	237 14 10	253 11 4	787 11 0	786 15 0	787 17 10	76 5 4	75 7 4	90 3 2	88 17 12		
April	262 2 1	244 15 0	262 8 5	790 11 4	785 5 0	790 18 11	77 10 6	76 11 5	92 8 7	89 15 11		
May	248 4 8	243 0 3	248 9 7	785 1 4	784 0 0	785 7 9	77 8 3	76 16 6	92 1 11	91 9 1		
June	250 15 0	244 2 6	250 19 3	793 5 0	789 3 4	793 11 5	73 7 6	74 0 8	90 11 11	90 3 10		
July	254 11 7	246 19 5	254 16 11	812 10 3	808 9 9	812 15 8	71 4 10	72 0 7	90 4 8	89 15 11		
August	254 3 2	243 14 7	245 5 11	801 12 3	803 10 3	802 0 11	70 19 0	71 7 1	87 8 7	87 9 2		
September	234 14 1	235 5 3	234 16 7	804 18 8	802 15 8	805 7 3	69 18 11	70 4 11	87 2 9	86 8 11		
October	222 4 8	224 1 5	222 7 2	804 7 2	798 2 2	804 14 9	67 5 0	68 13 7	87 18 3	86 12 5		
November	226 4 8	225 12 7	226 9 7	800 12 3	797 19 1	800 19 1	68 3 6	68 17 6	87 12 9	86 17 3		

ances, appears more or less inevitable.

Advance figures by the British Bureau of Non-Ferrous Metal statistics show U. K. consumption in October of all forms somewhat lower at 62,372 tons, compared with 65,748 tons a month earlier. Stocks of both blister and refined increased somewhat during that month.

European Copper Demand High

In Europe demand still seems to be running at quite a high level, and latterly demand from that quarter has been reinforced by some buying by Communist countries. In Japan too, consumption is running at a very high rate indeed, and the Japanese are scouring the world for supplies of copper concentrates in order to be able to build up their domestic production of refined copper. Their ore buyers have been active in Australia, Africa, Cuba, Chile, etc., and domestic refinery capacity is apparently being increased. One result of this very keen Japanese buying (which it has to be remembered is based on an artificially high domestic price for refined copper, enabling Japan to outbid other buyers) has been to put the Electrolytic Refining & Smelting Co. in Australia in a difficult position, as with substantial quantities of Australian concentrates

going to Japan for treatment, the refinery at Port Kembla is seriously short of material for treatment. At present of course, a substantial tonnage of concentrates is moving from Mount Isa to Japan, but this may well stop around the middle of next year when the addition to the Mount Isa smelter (now under construction) comes into operation.

The question of the possibility of a managed price for copper in Europe has come into the limelight again as a result of the remarks made by the Chairman of the Rhodesian Selection Trust with the Group's annual report. However, as far as can be ascertained there has been no real change in this situation and, in the U. K. and Germany at any rate, a number of consumers are still reluctant to abandon the present basis of pricing.

Tin Price Movements Narrow

The basic tin situation has undergone very little change during the past month, and this has been reflected in the narrow range of price movements. Considering that United States consumer demand has been consistently very slow, and gives little indication of turning upwards in the immediate future, this suggests that the metal is fundamentally in quite a strong position. Indeed, statistical forecasts for 1961 which are now making their appearance, anticipate production falling short of consumption by anything from 10,000 to 15,000 tons, even allowing for continued exports from the Sino Soviet Bloc on quite an appreciable scale. In consequence it is fairly confidently anticipated that the International Tin Council, which is meeting in Rome as this article is written, will leave the production and export of tin unrestricted for the first quarter of 1961. On the face of it, a deficiency in production of 10,000 tons or more might threaten a severe shortage of tin next year, but it has to be remembered that there are 10,000 tons in the Buffer Stock which can be released once the price exceeds £830 a ton, and Canada has some 3,000 tons in Government

stocks which would also probably be released at above £830. Moreover, there may well be a certain amount of stock in Malaya which can be marketed as the total holdings there are appreciably higher than they were when restriction was first imposed.

As American demand has been distinctly slow, it is obvious that consumption in the rest of the world has been making a good showing, and even though there are some clouds on the economic horizon, it looks as if non-U. S. demand will remain on quite a good scale for the time being.

According to the British Bureau of Non-Ferrous Metal Statistics U. K. production of tin in September rose to 2,730 tons of primary and 22 tons of secondary from the previous month's figures of 1,907 tons of primary and 18 tons of secondary. Stocks showed a slight decline at 11,550 tons (11,771 tons the previous month), of which consumers held 1,328 tons (1,405 tons). Tin consumption in September showed an increase at 1,983 tons against 1,696 tons a month earlier. Details are as follows:

Lead Picture Somber

Viewing the overall position of lead, it continues to provide a somewhat somber picture. World stocks during September rose again, entirely outside the U. S. A. Non-U. S. producers' holdings moved up from 169,914 short tons at the end of August to 176,709 tons. Compared with a year ago there has been a rise of 43,000 tons, and it is difficult to find any reason for believing this upward trend of stocks will quickly be reversed. Consumption in Europe has admittedly been quite good and in the first seven months of this year the U. K. consumed (including secondary) 34,000 long tons more lead than in the corresponding period of 1959. More recently, however, the fairly sharp setback in the former high level of activity in the motor car trade has made it seem almost certain that the lead requirements of

(Continued on Page 17)

LEAD

The British Bureau of Non-Ferrous Metal Statistics reports that U. K. stocks of lead at the end of September were 49,054 tons imported refined and 9,103 tons English refined, compared with 51,623 tons and 7,972 tons respectively at the end of August. Production of refined lead again showed an increase at 8,318 tons against 6,494 tons the previous month, but consumption showed an increase at 34,274 tons against 28,735 tons a month earlier. Details of consumption are given below:

	Sept. 1960	Jan. 1959	Sept. 1960
Cables	9,006	69,704	71,251
Batteries—as metal	3,571	21,661	29,908
Battery oxides	3,137	19,713	26,699
Tetraethyl lead	2,178	17,157	18,996
Other oxides and compounds	2,950	19,245	20,980
White lead	717	5,946	6,018
Shot (incl. bullet rod)	420	2,959	4,128
Sheet and pipe	6,284	50,407	55,356
Foil and collapsible tubes	359	2,618	3,124
Other rolled and extruded	812	4,937	6,417
Solder	1,857	10,771	11,919
Alloys	1,942	13,235	15,655
Misc. uses	1,641	10,273	12,448
Total consumption	34,274	248,626	282,899
Of which:			
Imported virgin lead	18,210	127,684	143,403
English refined	7,902	54,015	66,862
Scrap incl. remelted	8,162	66,927	72,634

METALS, DECEMBER, 1960

SEASON'S GREETINGS FOR DOMESTIC METAL MARKETS INCLUDE SHARP PRICE REDUCTIONS FOR LEAD, ZINC

After Nearly a Year of Stability, Both Are Slashed by 1.00c per Pound;
Copper Holds Steady at 30c Despite Light Demand; Tin Quotation Declines

November 22, 1960

AMONG the season's greetings for the domestic metal markets were price reductions for lead and zinc. Both metals were slashed a full cent—lead in a single action and zinc in two stages. In each case the decline reflected production in excess of demand, with settlement of strikes portending even greater surpluses. Copper, meanwhile, held steady despite light demand. Among the other metals, tin prices wended lower while aluminum, silver, quicksilver and platinum prices were unchanged.

The domestic price of lead was slashed by 1.00c a pound to a basis of 11.00c New York and 10.80c St. Louis. The 12.00c level had held for almost a full year, from December 21, 1959 until December 13, 1960. Although the domestic price had been vulnerable for weeks because it was more than 3.00c a pound below the London quotation, the drop came as a surprise to many in the industry. It had been felt that sellers had good-sized orders on their books at the December average so that by maintaining the 12.00c level to the end of the year, that would have been the price at which the business was booked. It was also felt that a reduction in price at this time of the year would hardly result in any appreciable increase in the volume of new business. If there was to be a price change, the consensus was that the proper time to make it was after the turn of the year.

The reduction in price to the 11.00c level is aimed at bringing about an equilibrium between supply and demand, especially outside the United States. Refined lead production outside the U. S. for the first ten months of the current year was 989,547 tons and the deliveries to foreign consumers (apparent consumption) were 799,191 tons, an excess production over consumption of 190,356 tons, according to ABMS figures. A further indication of the imbalance is that since the beginning of 1960 stocks of refined lead in the hands of foreign producers have increased by 54,534 tons whereas in the same period domestic stocks have increased by 18,776 tons.

Although the 11.00c price is the lowest that it has been since April 1959, doubt was expressed as to whether consumers will rush in and cover their forward needs, especially since there is nothing in the offing to indicate an immediate change in the supply-demand situation. A drop in price of a full cent a pound is unusual. The last time it happened was in January 1959 when the price dropped from 13.00c to 12.00c and prior to that was in April 1958 when the decline was also from 13.00c to 12.00c. In June 1957 the price also went down 1.00c from 15.00c to 14.00c a pound.

U. K. Lead at 14-year Low

Drastic as the domestic price decline was, the New York lead quotation is still about 1.00c higher than the London level which has dropped to a 14-year low. The London decline is attributed to the continued heavy shipments of Spanish lead and to the expectations of still larger quantities due to be shipped, which are likely to become a drag on the market. Added to this is the fact that world stocks are large and are likely to become still larger if the present rate of production is sustained.

Although the London price is now equivalent to about 10.00c a pound, c.i.f New York, duty paid, there is no talk of any immediate cut in the domestic price of 11.00c a pound. The drastic reduction of 1.00c a pound that was made last week was held to be sufficient for the time being. Confidence in the market, however, has been badly shaken so that only those consumers who are in need of lead are placing orders for single car-loads and at the average price rather than at the spot quotation.

Settlement of the seven-month strike at Bunker Hill does not augur well for the lead market. In 1959, the company produced about 94,000 tons of refined lead and 72,000 tons of zinc.

Zinc Strike Settlements

The end of strikes in the zinc industry helped tip the market balance down further. In addition to the 6,000 tons of Special High Grade zinc which will be added to the sup-

ply when Bunker Hill hits full stride in January, output of zinc has already been augmented by 11,000 tons a month due to the end of the strike at New Jersey Zinc on November 27. Zinc consumers therefore take the view that if the market was oversupplied with metal before the settlement of the strikes, it is likely to become more so now. Hence they are more disposed than ever to remain on the sidelines and wait to see what effect this is likely to have on prices. Another unsettling factor is the London price which is below the domestic parity after allowing for transportation and the U. S. import duty.

Prime Western zinc prices, after holding at 13.00c a pound East St. Louis since January 8, 1960, were cut 0.50c on December 13, 1960 and by a like amount on December 19. The Premiums on Special and Regular High Grade zinc remained unchanged with the former 1.50c a pound above Prime Western and the latter 1.35c higher. Die cast alloys were cut 1.25c a pound, 0.75c in the first action and 0.50c in the second. The 12.00c price for Prime Western is the lowest that it has been since October 1959. The new price did not bring consumers into market. Normally consumers welcome a lower quotation, but there was considerable criticism heard on the part of those who still have substantial inventory on hand. The lower price will necessitate a revaluation of the inventory and make it worth so much less.

Those who initiated the price cut on Prime Western did so in the hope that it might stimulate buying and also that it might result in a cut in production. The domestic supply of zinc has been in excess of demand in spite of the import quotas. Were it not for the large quantities of zinc, that were exported from the U. S., the domestic statistical position would have been far worse than it is. For the first 11 months of the current year the domestic output of all grades of slab zinc amounted to 794,696 tons and in the same period the deliveries to domestic consumers were 696,924 tons, or 97,772 tons below production. The exports of slab

zinc in the first 11 months came to 70,042 tons, or about 5 times as much as was exported in the same period last year. Even if the exports are added to the shipments to domestic consumers, the combined deliveries for the 11 months of 1960 totaled 766,696 tons, which was 27,730 tons less than the output in the same period.

Copper Market Unchanged

There has been little change in the domestic copper market during the month in review. Consumers continue to show little interest in placing orders either with producers or custom smelters, with both factors maintaining their price at 30.00c a pound delivered. In the outside market, copper was to be had at 29.00c a pound. The export price was quoted at 28.00c f.a.s. New York.

Metal merchants abroad are said to take the position that the copper statistics will continue to make a poor showing not only for December but into the first quarter of next year unless something more drastic is done to curtail production. A strike at Braden's mine in Chile, El Teniente, if it should break out on January 1 as it is expected to do, and even if it were to last a month, would entail a loss in output of about 16,000 tons. That loss, while it may inconvenience some foreign consumers of fire refined copper, is not deemed serious enough to correct the oversupply situation which now plagues the market.

There are many who feel that the London copper price has been maintained artificially by those foreign interests who supported the market. On the basis of the world supply-demand situation, the price, it is contended, should not be as firm as it has been and many see the market easing after the turn of the year unless, in addition to a strike in Chile, the flow of copper from Katanga and Northern Rhodesia should be interrupted by political disturbances in these areas.

World Copper Output Up

The copper statistics for the month of November left much to be desired. In spite of the cutbacks that some producers have announced world crude output in November showed a gain of 6,890 tons over October and in November Chuquibambilla did not produce for about two weeks because of the strike there. Consequently the December world output should show a further gain. The world deliveries of copper to consumers were about 20,453 tons less than the crude output with the result that world stocks were again

increased by more than 20,000 tons, bringing them to the highest level that they have been since August 1958. It should be borne in mind, however, that more producers are now reporting to the Copper Institute than in 1959 or in previous years, so that the increase in stocks may not actually be as large as they seem.

The world output of crude copper in November amounted to 306,473 tons, a gain of 6,890 tons over the preceding month. Of the November total the United States accounted for 110,816 tons (1,849 tons less than in September), and producers outside the U. S. accounted for 195,657 tons (a gain of 8,739 tons over October), according to figures compiled by the copper Institute.

World refined output in November came to 307,697 tons as against 308,398 tons in October. The United States accounted for 149,277 tons (2,220 tons below October, and the rest of the world 158,420 tons (a gain of 1,519 tons).

The world deliveries of refined copper in November were 286,020 tons as against 280,522 tons in October, a gain of 5,498 tons. This increase was due entirely to the larger deliveries to U. S. Consumers who in November took 99,749 tons as against 93,541 tons in October. The deliveries to foreign consumers in November came to 186,271 as compared with 187,271 tons in October.

The world stocks of refined copper at the end of November were 428,192 tons, a gain of 20,040 tons over the preceding month, making them the largest since August 1958 when not as many companies reported. The big increase was in domestic stocks which at the end of November were 130,254 tons, a gain of 16,837 tons, while stocks outside the U. S. were 297,938 tons, an increase of 3,203 tons. The domestic stocks at the end of last month were the largest that they have been since August 1958.

Free Tin Exports Set

The decision by the International Tin Council to maintain free tin exports for the first quarter of 1961 came as no surprise to the trade. The announcement was made at the conclusion of the 25th meeting that was held in Rome on December 5-7. Georges Peter, president of the ITC, issued a communique after the meeting in which he pointed out the improved statistical position of the metal. In spite of the fact that consumption of tin has fallen off in the United States, its use throughout the world has grown so that supply and demand are about in balance.

British Metal Markets

(Continued from Page 15)

the battery industry must be reduced for a time, and the general economic climate here is such that it is hard to see how any falling off in this direction can be made up by other users in the immediate future. Even on the Continent of Europe, where demand has been well maintained so far, further expansion in the next few months seems a little problematical. Already people are beginning to wonder what will happen at the International Study Group meeting next March. Although it is obvious that any relaxation of the present voluntary restrictions on supplies might have a very serious effect on prices, it is wondered whether the relatively small number of producers carrying this burden will be prepared to go on adding to their commitments, in the shape of stocks, indefinitely. **Zinc Eases Slightly**

Considering the rather disappointing condition of the motor car industry here, and the fact that manufacturers' stocks of some consumer durable goods are now assuming unwieldy proportions, it is hardly surprising that the zinc market during the past month has seen a slight easing in prices. Indeed in many ways it is encouraging that the setback has not been more pronounced. As far as the London market is concerned, g.o.b. metal is not in particularly plentiful supply, although consumers have no real difficulty in covering their requirements. High grade and special high grade seem to be more plentifully available for the time being. Up to the end of September U. K. consumption was very promising this year, showing a gain on the three-quarters of 29,000 tons over the corresponding period of 1959. Preliminary figures for October however, indicate a drop to 30,598 tons in consumption from the 33,284 tons used in September, and little surprise would be felt if the remaining two months of the year were also at a lower level.

On the Continent, business has continued pretty active, and Eastern outlets have also been good. With new smelters coming into production next year there is still talk of the possibility of some shortage of zinc concentrates in 1961, but it is too early to be at all dogmatic on this point, as obviously a good deal is going to depend on the level of world demand for the metal in the next few months.

Daily Metal Quotations for November, 1960

The following quotations are taken from the Daily Metal Reporter*
(In Cents Per Pound)

	Copper			Tin			Lead			Zinc			Alumi- num†		Anti- mony		Silver	
	Producers' Price	Custom Smelters' Price, Del.	Electro Refinery I. o. b.	Lake Del.	Aver. Prompt Electrolytic Export Price F. a. s. N. Y.	Spot	Straits New York	Outside St. Louis	Prime West. I. o. b.	Brass Spec. I. o. b.	High Grade Delivered	Spec. High Grade Delivered	50-lb. Ingot 99 1/2% Min. I. o. b.	Domestic Spot 99.5% I. o. b.	Antimony (Cents Per Ounce) New York			
1	30.00	30.00	29.60	30.00	27.50	104.00	103.375	12.00	11.80	13.00	13.50	14.50	26.00	29.00	91.375			
2	30.00	30.00	29.60	30.00	27.50	104.00	103.25	12.00	11.80	13.00	13.50	14.50	26.00	29.00	91.375			
3	30.00	30.00	29.60	30.00	27.50	104.125	103.25	12.00	11.80	13.00	13.50	14.50	26.00	29.00	91.375			
4	30.00	30.00	29.60	30.00	27.50	104.00	103.375	12.00	11.80	13.00	13.50	14.50	26.00	29.00	91.375			
7	30.00	30.00	29.60	30.00	27.50	104.00	103.25	12.00	11.80	13.00	13.50	14.50	26.00	29.00	91.375			
9	30.00	30.00	29.60	30.00	28.00	104.00	103.25	12.00	11.80	13.00	13.50	14.50	26.00	29.00	91.375			
10	30.00	30.00	29.60	30.00	28.00	103.875	103.125	12.00	11.80	13.00	13.50	14.50	26.00	29.00	91.375			
14	30.00	30.00	29.60	30.00	28.00	103.75	103.00	12.00	11.80	13.00	13.50	14.50	26.00	29.00	91.375			
15	30.00	30.00	29.60	30.00	28.00	103.25	102.625	12.00	11.80	13.00	13.50	14.50	26.00	29.00	91.375			
16	30.00	30.00	29.60	30.00	28.00	103.25	102.625	12.00	11.80	13.00	13.50	14.50	26.00	29.00	91.375			
17	30.00	30.00	29.60	30.00	28.00	103.25	103.00	12.00	11.80	13.00	13.50	14.50	26.00	29.00	91.375			
18	30.00	30.00	29.60	30.00	28.00	103.25	103.00	12.00	11.80	13.00	13.50	14.50	26.00	29.00	91.375			
21	30.00	30.00	29.60	30.00	28.00	103.00	102.75	12.00	11.80	13.00	13.50	14.50	26.00	29.00	91.375			
22	30.00	30.00	29.60	30.00	28.00	103.00	102.75	12.00	11.80	13.00	13.50	14.50	26.00	29.00	91.375			
23	30.00	30.00	29.60	30.00	28.25	102.875	102.75	12.00	11.80	13.00	13.50	14.50	26.00	29.00	91.375			
25	30.00	30.00	29.60	30.00	28.25	102.875	102.75	12.00	11.80	13.00	13.50	14.50	26.00	29.00	91.375			
28	30.00	30.00	29.60	30.00	28.125	102.875	102.75	12.00	11.80	13.00	13.50	14.50	26.00	29.00	91.375			
29	30.00	30.00	29.60	30.00	28.125	102.75	102.25	12.00	11.80	13.00	13.50	14.50	26.00	29.00	91.375			
30	30.00	30.00	29.60	30.00	28.125	102.50	102.00	12.00	11.80	13.00	13.50	14.50	26.00	29.00	91.375			
AV.	30.00	30.00	29.60	30.00	27.928	103.368	102.855	12.00	11.80	13.00	13.50	14.50	26.00	29.00	91.375			
HI.	30.00	30.00	29.60	30.00	28.25	104.125	103.375	12.00	11.80	13.00	13.50	14.50	26.00	29.00	91.375			
LO.	30.00	30.00	29.60	30.00	27.50	102.50	102.00	12.00	11.80	13.00	13.50	14.50	26.00	29.00	91.375			

* When split quotations prevail the daily average price is listed. The highs and lows for the month take into consideration the levels reached at both sides of such ranges.
† Price prior to August 1, 1960, was 28.10c, based on 30-lb ingot, 99 1/2% plus.

Copper Statistics Reported by Copper Institute

Combined Totals in U. S. A. and Outside U. S. A.

	Crude Production		(In tons of 2,000 pounds)			Stock Increases or Decreases		
	Primary	Secondary	Refined Production	Deliveries to Customers	Refined Stock End of Period	Blister	Refined	Total
1957								
Total	2,897,719	123,270	3,035,583	2,853,307	458,340	-14,599	+103,920	+89,321
1958								
Total	2,713,412	138,696	2,811,108	2,918,404	262,544	+41,000	-195,796	-154,796
1959								
Total	2,860,454	134,583	2,926,657	2,973,026	293,006	+68,380	+28,774	+97,154
1960								
January**	259,779	13,116	257,614	272,040	304,038	+15,278	-3,426	+11,852
February	271,765	14,578	269,952	280,656	302,351	+16,391	-1,687	+14,704
March	297,064	12,198	303,503	307,572	300,790	+15,759	-1,561	+14,198
April	302,268	17,477	326,403	319,037	309,357	-6,658	+8,567	+1,909
May	301,070	17,248	323,167	321,783	312,666	-4,849	+3,309	-1,540
June	302,703	16,786	329,518	305,964	338,202	-10,029	+25,536	+15,507
July	294,052	13,584	299,427	268,191	371,306	+8,209	+33,104	+41,313
August	295,318	16,257	330,365	319,337	383,305	-18,790	+11,999	-6,791
September	306,264	12,718	322,575	328,660	378,845	-3,223	-4,460	-7,683
October	286,470	13,113	308,398	280,522	408,152	-9,199	+29,307	+20,108
November	294,352	12,121	307,697	286,020	428,192	-1,224	+20,040	+18,816

In U. S. A.

1957								
Total	1,116,380	112,060	1,616,964	1,277,946	181,024	.....	+60,379	.....
1958								
Total	1,008,170	131,294	1,446,540	1,179,416	80,722	.....	-100,302	.....
1959								
Total	805,875	121,462	1,221,612	1,312,328	64,763	.....	-17,647	.....
1960								
January	65,677	10,707	86,491	102,829	68,550	.....	+3,787	.....
February	85,899	12,628	105,417	111,851	64,007	.....	-4,543	.....
March	107,514	9,166	131,308	126,776	61,598	.....	-2,409	.....
April	104,895	14,765	153,053	129,663	63,373	.....	+1,775	.....
May	104,272	13,857	147,050	108,266	65,328	.....	+1,995	.....
June	95,522	13,585	161,073	106,207	87,667	.....	+22,339	.....
July	91,238	10,822	132,697	83,788	93,102	.....	+5,435	.....
August	85,579	13,368	157,382	105,417	97,379	.....	+4,277	.....
September	96,503	10,150	147,934	120,585	84,316	.....	-13,063	.....
October	102,034	10,631	151,497	93,451	113,417	.....	+29,101	.....
November	100,884	9,932	149,277	99,749	130,254	.....	+16,837	.....

Outside U. S. A.*

1957								
Total	1,781,339	11,210	1,418,624	1,575,361	277,316	.....	+43,541	.....
1958								
Total	1,705,242	7,402	1,364,568	1,738,988	181,822	.....	-95,494	.....
1959								
Total	2,054,579	13,121	1,705,045	1,660,698	228,243	.....	+46,421	.....
1960								
January**	194,099	2,409	171,123	169,211	235,488	.....	-7,213	.....
February	185,866	1,950	164,535	168,805	238,344	.....	+2,856	.....
March	199,550	3,023	172,145	180,796	239,192	.....	+848	.....
April	197,373	2,712	173,350	189,374	245,984	.....	+6,792	.....
May	195,278	3,391	174,298	210,868	247,338	.....	+1,354	.....
June	207,181	3,201	168,445	199,757	250,535	.....	+3,197	.....
July	202,814	2,762	166,730	184,403	278,204	.....	+27,669	.....
August	209,736	2,421	172,983	213,920	285,926	.....	+7,722	.....
September	210,131	2,568	174,641	208,075	294,529	.....	+8,603	.....
October	184,436	2,482	156,901	187,081	294,735	.....	+206	.....
November	193,468	2,189	158,420	186,271	297,938	.....	+3,203	.....

* Excludes production of Russia, Japan, Yugoslavia, Norway, Sweden, Finland, the Messina Mine in Transvaal and output of several other small producing countries from which reports are not available. Represents approximately 90 per cent of Free World.
 ** Starting with January, 1960, figures include production from Australia and additional production from Europe.

Electrolytic Copper

Producers' Price, Del. Valley Monthly Average Prices (Cents Per Pound)				
1957	1958	1959	1960	
Jan. 36.00	25.69	29.00	33.00	
Feb. 33.318	25.00	29.972	33.00	
Mar. 32.00	25.00	31.14	33.00	
Apr. 32.00	25.00	31.50	33.00	
May 32.00	25.00	31.50	33.00	
June 30.955	25.36	31.50	33.00	
July 29.25	26.125	30.587	33.00	
Aug. 28.639	26.50	30.00	33.00	
Sept. 27.031	26.50	30.571	33.00	
Oct. 27.00	27.548	30.75	31.05	
Nov. 27.00	29.00	32.375	30.00	
Dec. 27.00	29.00	33.00	...	
Aver. 30.183	26.31	30.991	...	

Electrolytic Copper

Custom Smelters' Price, Del. Valley Monthly Average Prices (Cents Per Pound)				
1957	1958	1959	1960	
Jan. 34.87	24.577	29.429	35.00	
Feb. 32.273	23.557	30.361	35.00	
Mar. 30.952	23.326	33.31	33.609	
Apr. 31.24	23.66	32.84	33.00	
May 30.163	23.865	32.00	33.00	
June 29.60	25.52	31.477	33.00	
July 28.39	29.231	29.52	33.00	
Aug. 27.862	26.52	30.056	33.00	
Sept. 25.948	26.355	33.00	33.00	
Oct. 25.722	28.577	33.00	30.35	
Nov. 25.435	29.829	Nom.	30.00	
Dec. 25.26	28.846	35.00	...	
Aver. 28.93	25.905	31.808	...	

Lake Copper

Producers' Price Delivered Monthly Average Prices (Cents Per Pound)				
1957	1958	1959	1960	
Jan. 36.00	25.69	29.00	33.00	
Feb. 33.182	25.00	30.00	33.00	
Mar. 32.00	25.00	31.14	33.00	
Apr. 32.00	25.00	31.50	33.00	
May 32.00	25.00	31.50	33.00	
June 30.955	25.00	31.50	33.00	
July 29.25	25.75	30.587	33.00	
Aug. 28.611	26.50	30.00	33.00	
Sept. 27.031	26.50	30.571	33.00	
Oct. 27.00	27.577	31.50	31.05	
Nov. 27.00	29.00	32.833	30.00	
Dec. 27.00	29.00	33.00	...	
Aver. 30.162	26.251	31.222	...	

Fabricators' Copper Statistics

(In tons of 2,000 pounds)

	Fabricators' Stocks of Refined Cop.	Unfilled Purchases of Refined by Fab. from Producers	Fabricators' Working Stocks	Unfilled Sales by Fabricators to Customers	Actual Copper Consumed by Fabricators	Excess Fabricators' Stocks Over Orders Bkd.
1954						
Total	360,526	58,125	304,619	136,581	1,231,840	— 22,549
1955						
Total	.....	.....	.....	.....	1,418,241	.....
1956						
Total	.....	.....	.....	.....	1,416,378	.....
1957						
Dec.	430,171	75,627	347,465	138,631	83,067	+ 19,702
Total	.....	.....	.....	.....	1,279,086	.....
1958						
Jan.	445,514	57,917	348,426	123,756	94,642	+ 31,249
Feb.	452,673	52,342	351,035	128,330	86,625	+ 25,650
Mar.	448,125	71,693	346,875	141,387	83,694	+ 31,556
Apr.	450,442	76,602	347,607	145,623	79,613	+ 33,814
May	441,001	78,194	346,404	138,190	88,447	+ 34,601
June	433,526	72,383	330,301	145,162	109,011	+ 30,448
July	431,796	77,362	326,263	153,529	79,353	+ 29,366
Aug.	421,931	78,194	323,667	150,436	96,717	+ 26,022
Sept.	416,887	71,025	319,281	145,390	105,474	+ 28,941
Oct.	399,113	91,019	315,929	156,692	138,017	+ 17,511
Nov.	419,914	88,580	328,238	157,799	110,487	+ 22,457
Dec.	447,123	90,401	326,438	177,869	92,573	+ 35,217
Total	.....	.....	.....	.....	1,165,364	.....
1959						
Jan.	457,387	101,182	337,761	172,698	108,556	+ 44,070
Feb.	459,046	123,321	390,522	183,113	116,565	+ 58,732
Mar.	449,441	130,785	334,904	211,547	133,259	+ 33,775
Apr.	463,582	125,250	337,282	204,618	120,680	+ 46,932
May	474,657	133,694	338,835	210,424	124,060	+ 59,092
June	492,072	111,229	343,585	191,675	133,702	+ 67,841
July	518,699	110,367	357,474	193,338	81,500	+ 68,254
Aug.	487,259	97,786	359,049	191,476	121,563	+ 34,520
Sept.	462,880	111,675	360,760	206,254	116,880	+ 7,541
Oct.	431,612	119,806	347,136	211,359	100,302	— 7,077
Nov.	412,401	127,162	338,856	224,442	102,837	— 23,735
Dec.	414,757	130,324	340,349	202,775	88,706	+ 1,957
Total	.....	.....	.....	.....	1,347,610	.....
1960						
Jan.	414,652	141,860	340,233	193,300	102,295	+ 22,979
Feb.	423,131	132,696	343,196	165,991	103,072	+ 46,640
Mar.	441,026	119,963	348,081	134,461	108,881	+ 78,447
Apr.	457,070	99,814	357,711	111,062	113,619	+ 88,111
May	457,644	85,491	360,770	117,150	107,838	+ 65,215
June	451,982	90,527	364,301	132,070	112,223	+ 46,138
July	459,620	87,798	372,186	126,281	75,650	+ 48,951
Aug.	457,421	81,338	373,186	122,415	107,616	+ 43,026
Sept.	465,178	77,787	378,677	127,346	112,828	+ 37,032
Oct.	453,406	75,052	370,939	118,241	105,223	+ 39,268

Scrap Copper Receipts by Custom Smelters and Refineries in United States*

(In Short Tons)

	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Jan.	6,640	4,528	6,486	9,859	11,047	14,322	17,506	16,024	14,511	15,165
Feb.	5,153	3,693	10,337	8,490	15,198	14,497	11,145	9,518	14,712	14,414
Mar.	7,912	5,245	19,991	9,738	12,195	15,921	15,934	11,783	19,522	11,675
Apr.	8,553	6,214	16,583	9,004	15,162	17,233	14,288	15,279	17,525	17,643
May	8,458	8,033	10,857	5,687	15,133	20,805	12,397	13,989	13,960	16,497
June	8,628	4,425	10,945	13,909	14,765	14,758	11,949	13,945	15,065	15,769
July	6,442	5,188	9,063	10,260	9,988	12,632	8,926	12,185	11,144	12,609
Aug.	6,113	5,003	7,137	10,100	12,197	12,510	11,645	11,896	7,468	16,400
Sept.	3,561	4,667	9,042	10,641	15,037	9,518	9,756	9,268	10,070	12,559
Oct.	3,336	4,602	10,065	11,662	12,897	15,570	13,151	23,088	12,860	13,168
Nov.	3,179	4,724	7,815	10,879	9,865	11,369	11,146	16,425	11,773	12,309
Dec.	4,538	6,208	11,476	14,876	13,180	14,613	11,237	10,796	10,894	.....
Total	71,812	62,470	129,798	127,449	154,714	173,748	147,080	164,196	159,507	.....

* As compiled by Copper Institute.

Brass and Bronze Ingot Monthly Shipments

(NET TONS)

The following figures showing the combined shipments of ingot brass and bronze are compiled by the Ingot Brass and Bronze Industry and represent in excess of 95 per cent of the deliveries of the entire industry.

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Jan.	18,874	28,416	28,315	23,423	20,661	25,201	27,736	25,681	20,468	22,046	22,695
Feb.	18,487	27,168	24,211	25,429	19,920	25,349	24,949	20,769	17,413	23,746	23,129
Mar.	22,494	31,997	28,890	28,256	23,653	29,713	28,310	21,948	18,825	26,109	23,232
Apr.	22,118	30,473	22,547	25,044	24,746	27,641	25,808	23,507	18,009	26,115	20,413
May	23,643	33,267	21,740	21,660	22,269	23,708	23,437	22,037	17,191	23,967	19,885
June	25,093	33,817	21,274	20,818	22,348	25,141	18,842	18,898	17,962	22,922	19,625
July	21,609	32,016	18,947	19,321	17,074	18,513	17,364	16,695	16,658	20,346	14,587
Aug.	29,689	25,285	21,807	20,156	21,684	27,013	23,812	19,654	17,882	21,741	20,216
Sept.	28,811	22,285	22,770	21,463	22,464	26,349	20,929	19,670	20,540	22,685	18,259
Oct.	32,240	23,124	25,811	22,280	24,080	25,228	23,045	22,800	23,225	23,067	18,948
Nov.	31,748	23,544	23,441	21,806	23,061	25,102	21,818	19,767	20,758	22,283	.....
Dec.	28,575	20,987	22,983	20,541	21,274	21,448	18,046	16,875	18,676	19,535	.....
Total	303,563	332,378	277,736	271,251	263,233	298,406	274,096	245,297	227,607	274,582	.....
Aver.	25,297	27,615	23,145	22,694	21,935	24,867	22,841	20,481	18,133	22,864	.....

Mine Production of Copper in United States

	(U. S. Bureau of Mines) (In short tons)				Total
	Eastern	Missouri	Western		
1957					
Ttl.	79,369	1,800	995,753	1,076,922	
1958					
Ttl.	76,849	1,250	902,021	980,304	
1959					
Apr.	7,240	150	93,209	100,599	
May	7,007	110	94,493	101,610	
June	7,245	124	87,035	94,404	
July	6,763	111	80,058	86,932	
Aug.	6,813	116	47,910	54,839	
Sept.	6,655	123	20,342	27,120	
Oct.	7,092	152	22,669	29,913	
Nov.	3,226	140	22,529	25,895	
Dec.	3,228	128	22,504	25,860	
Ttl.	74,255	1,550	754,630	830,435	
1960					
Jan.	3,904	107	43,845	47,856	
Feb.	3,819	114	71,257	75,190	
Mar.	7,229	96	88,931	96,256	
Apr.	7,149	97	90,288	97,534	
May	7,530	77	91,152	98,759	
June	7,296	97	87,839	95,232	
July	6,096	76	80,119	86,291	
Aug.	7,038	89	83,752	90,879	
Sept.	6,599	95	11,185	97,859	

Average Custom Smelters' Scrap Buying Prices

(Cents per pound for carload lots del. consumers' works)

	No. 1 Copper Scrap	No. 2 Copper Scrap	Light Copper Scrap	Re-refinery Brass
1958				
Aver.	21.788	20.282	18.035	18.047
1959				
Oct.	27.929	25.405	23.155	24.905
Nov.	30.00	26.208	23.958	24.528
Dec.	29.50	25.993	23.743	24.239
Av.	27.321	25.377	23.102	24.774
1960				
Jan.	30.025	26.30	24.05	24.55
Feb.	29.868	25.75	23.50	24.00
Mar.	27.207	24.038	21.788	22.071
Apr.	27.063	24.256	22.006	22.256
May	26.548	24.369	22.119	22.368
June	26.557	24.455	22.205	22.455
July	27.575	25.075	22.825	23.075
Aug.	27.962	25.81	23.56	23.81
Sept.	26.888	24.888	22.638	22.888
Oct.	24.90	22.90	20.65	20.90
Nov.	25.237	23.237	20.986	21.236

*Of dry content for material having a dry copper content in excess of 60%.

Brass Ingot Makers' Scrap Copper Buying Prices

(Average Prices)
(Cents per pound del. refinery for 60,000 lbs. of each grade)

	No. 1 Copper Scrap	No. 2 Copper Scrap	No. 1 Composition	Heavy Yellow Brass
1958				
Aver.	21.777	20.277	18.653	13.024
1959				
Oct.	27.595	25.405	22.19	16.048
Nov.	29.00	26.208	22.75	16.326
Dec.	28.50	25.993	22.50	16.00
Av.	27.120	25.377	21.567	15.52
1960				
Jan.	29.025	26.30	22.74	16.39
Feb.	28.408	25.75	22.00	16.00
Mar.	27.321	24.038	20.429	15.174
Apr.	27.063	24.256	20.613	15.15
May	26.548	24.369	20.613	15.083
June	26.715	24.455	20.25	15.193
July	27.375	25.075	21.075	15.875
Aug.	27.712	25.81	21.679	15.951
Sept.	26.838	24.888	21.762	16.363
Oct.	24.65	22.90	20.10	15.15
Nov.	24.987	23.237	19.153	15.132

Lead Statistics Reported by American Bureau of Metal Statistics

Lead Refineries in U. S. A. and Outside U. S. A.

(Recoverable Lead Content in Tons of 2,000 Pounds)

Combined U. S. A. and Outside U. S. A.

	REFINED PRODUCTION			DELIVERIES			STOCKS		
	Pig	Antimonial Lead Content	Total	Pig	Antimonial Lead Content	Total	Pig	Antimonial Lead Content	Total
1958									
Total ..	1,485,282	106,383	1,591,665	1,307,390	102,697	1,410,087	.....	.....	.....
1959									
Total ..	1,406,485	105,943	1,512,418	1,422,985	106,666	1,529,651	.....	.....	.....
1960									
Mar. ..	128,203	8,490	136,693	122,013	8,327	130,340	293,512	19,882	313,394
Apr. ..	137,979	7,574	145,553	107,128	7,691	114,819	324,400	19,765	344,165
May ..	130,426	11,126	141,552	125,126	8,556	133,682	329,700	22,335	352,035
June ..	117,093	8,181	125,274	113,103	9,361	122,464	333,690	21,155	354,845
July ..	117,065	9,290	126,355	105,097	7,187	112,284	345,658	23,258	368,916
Aug. ..	112,994	9,157	122,151	127,102	9,474	136,576	331,550	22,941	354,491
Sept. ..	117,297	6,073	123,370	110,602	7,497	118,099	338,245	21,517	359,762
Oct.	129,101	9,096	138,197	122,559	9,336	131,895	344,813	21,277	366,090

U. S. A.

1958									
Total ..	473,208	46,985	520,193	589,528	49,893	639,421	.....	.....	.....
1959									
Total ..	343,726	34,628	378,354	596,214	42,312	638,526	.....	.....	.....
1960									
Mar. ..	35,018	2,070	37,088	40,536	2,289	42,825	158,023	12,399	170,422
Apr. ..	37,465	2,186	39,651	36,572	2,267	38,839	164,875	12,514	177,389
May ..	33,474	3,296	36,770	47,433	2,664	50,097	170,208	13,426	183,634
June ..	31,188	2,094	33,282	46,753	2,921	49,674	169,879	12,837	182,716
July ..	26,906	2,227	29,133	34,595	2,003	36,598	171,825	13,328	185,153
Aug. ..	29,936	2,532	32,468	47,569	2,871	50,440	171,356	13,221	184,577
Sept. ..	27,917	1,600	29,517	39,570	3,365	42,935	171,520	11,533	183,053
Oct.	30,131	3,055	33,186	38,452	3,538	41,990	173,470	11,165	184,635

Outside U. S. A.

1958									
Total ..	1,012,074	59,398	1,071,472	717,862	52,804	710,666	.....	.....	.....
1959									
Total ..	1,062,759	71,315	1,134,074	826,771	64,453	891,125	.....	.....	.....
1960									
Mar. ..	93,185	6,420	99,605	81,477	6,038	87,515	135,489	7,483	142,972
Apr. ..	100,514	5,388	105,902	70,556	5,424	75,980	159,525	7,251	166,776
May ..	96,952	7,830	104,782	77,693	5,892	83,585	159,492	8,909	168,401
June ..	85,905	6,087	91,992	66,350	6,440	72,790	163,811	8,318	172,129
July ..	90,159	7,063	97,222	70,502	5,184	75,686	173,833	9,930	183,763
Aug. ..	83,058	6,625	89,683	79,533	6,603	86,136	160,194	9,720	169,914
Sept. ..	89,380	4,473	93,853	71,032	4,132	75,164	166,725	9,984	176,709
Oct.	98,970	6,041	105,011	84,107	5,798	89,905	171,343	10,112	181,455

* Stocks on Jan. 1, 1960 are not comparable to those reported for Dec. 31, 1959 due to changes in the basis by reporting areas.

Summary of Lead Statistics for United States

Recoverable Lead Content in Tons of 2,000 Pounds	Raw Material at Smelter	Stocks (end of period)				Smelter Receipts			
		Base Bullion	At Smelter & Transit	At Refinery and Process	Refined Pig and Antimonial	Total	Primary Origin	Outside U.S.A.	Scrap
1958							U.S.A.		
Total ..							297,687	191,415	29,080
1959									
Total ..							244,803	125,100	20,596
1960									
March ..	93,108	5,029	36,866	170,422	305,425	29,979	17,105	2,128	49,212
April ..	89,421	3,639	39,950	177,389	310,399	27,863	9,264	2,207	39,334
May ..	98,470	4,402	36,979	183,634	323,485	22,537	17,959	2,048	42,544
June ..	95,364	5,210	39,928	182,716	323,218	20,895	11,717	1,337	33,949
July ..	93,153	5,234	45,446	185,153	328,986	19,466	11,957	1,285	32,708
August ..	90,346	5,847	48,304	184,577	329,074	20,002	9,105	1,874	32,981
September ..	96,610	5,643	48,613	183,053	333,919	21,713	13,757	1,945	37,445
October ..	96,453	5,149	54,427	184,635	340,664	23,207	13,101	1,107	37,415
1958									
Total ..		512,323	473,208	46,985	520,193		589,528	49,893	639,421
1959									
Total ..		381,656	343,726	34,628	378,354		596,214	42,312	638,526
1960									
March ..		41,673	35,018	2,070	37,088		40,536	2,289	42,825
April ..		42,436	37,465	2,186	39,651		36,572	2,267	38,839
May ..		33,106	33,474	3,296	36,770		47,433	2,664	50,097
June ..		36,525	31,188	2,094	33,282		46,753	2,921	49,674
July ..		34,457	26,906	2,227	29,133		34,595	2,003	36,598
August ..		35,271	29,936	2,532	32,468		47,569	2,871	50,440
September ..		30,801	27,917	1,600	29,517		39,570	3,365	42,935
October ..		37,149	30,131	3,055	33,186		38,452	3,538	41,990

United States Lead Statistics of Primary Refineries

(American Bureau of Metal Statistics)
(In tons of 2,000 lbs.)

	Stock At Beginning	Production Primary & Secondary	Total Supply	Stock At End	Domestic Shipments
1954	81,152	551,618	632,770	92,719	475,551
1955	28,855	547,153	639,872	31,089	531,339
1956	.....	613,293	644,382	.....	529,484
1957	.....	604,353	645,534	.....	463,060
1958	.....	522,956	614,554	.....	380,359
1959	.....	.....	.....	.....	.....
March	214,946	39,238	254,184	210,524	40,980
April	210,524	40,606	251,130	197,823	52,469
May	197,823	39,101	236,924	171,577	65,207
June	171,577	37,459	209,036	133,235	75,465
July	133,235	32,882	166,117	142,694	22,380
August	142,694	25,589	168,283	124,259	43,850
September	124,259	14,801	139,060	117,296	21,795
October	117,296	18,892	136,188	115,418	20,552
November	115,418	18,796	134,214	114,303	19,869
December	114,303	30,160	144,463	119,993	24,516
Total	.....	380,674	579,182	.....	450,983
1960	.....	.....	.....	.....	.....
January	119,993	40,043	160,036	117,589	42,083
February	117,589	36,435	154,024	116,269	37,599
March	116,269	37,192	153,461	109,148	44,076
April	109,148	40,177	149,325	118,329	30,686
May	118,329	36,509	154,838	123,148	31,690
June	123,148	33,448	156,596	129,859	26,725
July	129,859	29,270	159,129	135,858	23,169
August	135,858	32,623	168,481	138,365	30,001
September	138,365	29,638	168,003	138,584	29,406
October	138,584	33,336	171,920	141,338	30,152

In instances where the figures are not in balance it is due to shipments to other than domestic consumers.

Industrial Classification of Domestic Lead Shipments

(American Bureau of Metal Statistics)

(In tons of 2,000 lbs.)

	Cable	Amm.	Foil	Batt'y	Brass Making	Sundries	Jobbers	Unclassified
1955	.....	.....	.....	.....	.....	.....	.....	.....
Total 1955	72,418	27,599	2,622	88,461	3,960	52,994	13,034	270,251
1956	.....	.....	.....	.....	.....	.....	.....	.....
Total 1956	80,360	24,501	1,435	70,614	3,158	56,851	13,213	274,716
1957	.....	.....	.....	.....	.....	.....	.....	.....
Total 1957	58,444	25,452	1,691	64,761	7,420	53,284	11,127	240,881
1958	.....	.....	.....	.....	.....	.....	.....	.....
May	3,216	1,850	35	4,871	866	3,071	1,027	15,285
June	3,463	1,950	35	2,767	480	4,217	1,716	17,450
July	3,169	1,250	275	3,936	515	4,157	1,052	17,594
Aug.	3,481	2,415	70	4,992	400	6,399	100	16,397
Sept.	4,132	2,290	320	5,775	848	6,771	1,747	19,774
Oct.	3,243	2,450	.....	4,548	285	6,210	1,641	28,270
Nov.	3,690	2,150	50	6,527	360	4,887	822	12,105
Dec.	2,267	2,100	50	6,216	215	2,578	652	10,774
Total	38,838	20,855	1,080	57,180	5,841	51,086	11,882	193,592
1959	.....	.....	.....	.....	.....	.....	.....	.....
Jan.	2,284	2,100	100	5,594	161	3,545	727	18,524
Feb.	2,988	1,225	50	5,254	735	2,706	931	16,796
Mar.	3,156	1,850	105	5,905	378	6,006	2,185	21,395
April	3,686	2,150	35	7,410	691	5,356	1,966	31,355
May	4,054	2,900	35	6,870	475	7,990	2,843	40,040
June	5,272	3,210	70	12,515	180	8,009	3,663	42,546
July	850	295	70	2,570	315	3,166	997	14,117
Aug.	3,268	1,150	205	3,073	410	6,640	1,921	27,183
Sept.	1,003	.....	35	3,401	255	2,296	1,484	13,321
Oct.	700	500	35	4,299	226	2,676	1,021	11,093
Nov.	2,630	200	70	3,714	205	2,566	797	9,687
Dec.	2,133	950	70	3,479	475	2,628	738	14,043
Total	32,024	16,530	880	64,084	4,508	53,584	19,273	260,100
1960	.....	.....	.....	.....	.....	.....	.....	.....
Jan.	2,138	3,352	105	3,268	550	4,786	1,106	26,778
Feb.	2,665	2,350	50	4,930	295	3,715	574	23,020
Mar.	2,221	1,500	.....	8,195	1,050	8,298	2,133	20,679
Apr.	2,005	2,707	83	2,891	380	5,180	916	16,519
May	2,327	1,000	35	4,516	115	4,526	927	18,244
June	2,665	1,500	70	5,043	230	714	690	15,813
July	1,690	1,280	70	3,745	88	2,120	28	14,148
August	2,796	1,692	35	5,873	220	4,603	50	14,732
Sept.	2,049	2,208	35	4,439	469	3,371	255	16,579
Oct.	3,453	1,996	.....	4,936	146	3,064	530	16,027

Lead Prices at New York

(Common Grade)
Monthly Average Prices
(Cents Per Pound)

	1957	1958	1959	1960
Jan.	16.00	13.00	12.619	12.00
Feb.	16.00	13.00	11.583	12.00
Mar.	16.00	13.00	11.42	12.00
Apr.	16.00	12.00	11.20	12.00
May	15.385	11.712	11.905	12.00
June	14.32	11.24	12.00	12.00
July	14.00	11.00	12.00	12.00
Aug.	14.00	10.85	12.286	12.00
Sept.	14.00	10.89	13.00	12.00
Oct.	13.704	12.673	13.00	12.00
Nov.	13.50	13.00	13.00	12.00
Dec.	13.00	13.00	12.523	...
Aver.	14.66	12.114	12.211	...

Lead Sheet Prices

(To Jobbers, Full Sheets)
Monthly Average Prices
(Cents Per Pound)

	1957	1958	1959	1960
Jan.	21.50	18.50	18.119	17.50
Feb.	21.50	18.50	17.083	17.50
Mar.	21.50	18.50	16.92	17.50
Apr.	21.50	17.50	16.70	17.50
May	20.885	17.212	17.405	17.50
June	19.82	16.74	17.50	17.50
July	19.82	16.50	17.50	17.50
Aug.	19.50	16.35	17.786	17.50
Sept.	19.50	16.39	18.50	17.50
Oct.	19.204	18.173	18.50	17.50
Nov.	19.00	18.50	18.50	17.50
Dec.	18.50	18.50	18.023	...

Battery Shipments

The following table shows replacement battery shipments in the United States as compiled by the Business Information Division of Dun & Bradstreet, Inc., for the Association of American Battery Manufacturers:

(In thousands of units)

	1957	1958	1959	1960
Jan. ..	2,638	2,004	2,672	1,866
Feb. ..	1,961	1,803	1,791	1,641
Mar. ..	1,254	1,577	1,376	1,877
Apr. ..	1,178	1,242	1,437	1,545
May ..	1,605	1,454	1,593	1,650
June ..	1,878	1,773	2,118	2,072
July ..	2,469	2,101	2,556	2,131
Aug. ..	2,856	2,333	2,728	2,550
Sept. ..	2,688	2,704	2,889	2,708
Oct. ..	3,042	2,976	3,069	2,832
Nov. ..	2,359	2,262	2,799	....
Dec. ..	2,015	3,041	2,465	....
Total	25,943	25,270	27,493	....

METALS, DECEMBER, 1960

Lead Stocks at Primary U. S. Smelters and Refiners

(American Bureau of Metal Statistics)

(In tons of 2,000 lbs.)

	In ore and matte and in process at smelters	At smelters & refineries	In transit to refineries	In process at refineries	Refined pig lead	Anti- monial lead	Total Stocks
1958							
Aug. 1.	83,347	12,438	860	21,615	154,378	10,482	283,379
Sept. 1.	77,416	14,767	1,176	20,444	158,413	10,889	283,105
Oct. 1.	72,724	14,797	2,223	18,125	159,662	11,004	278,535
Nov. 1.	61,819	11,492	1,086	19,041	157,385	12,050	262,873
Dec. 1.	62,960	11,072	1,565	20,941	167,493	11,828	275,859
1959							
Jan. 1.	72,378	10,917	1,767	19,746	185,913	12,595	303,316
Feb. 1.	72,832	10,565	1,889	21,317	197,085	11,789	315,477
Mar. 1.	62,383	11,707	1,447	21,479	202,835	12,111	311,962
Apr. 1.	68,433	14,352	350	20,575	198,459	12,065	314,234
May 1.	64,538	12,373	624	20,507	184,468	13,355	295,865
June 1.	55,223	12,239	766	20,391	157,981	13,596	260,196
July 1.	58,451	13,270	943	19,468	120,914	12,321	225,367
Aug. 1.	53,115	18,379	158	18,021	129,551	13,143	232,367
Sept. 1.	50,007	17,389	....	15,638	116,344	7,915	207,293
Oct. 1.	61,910	17,925	....	14,932	109,527	7,769	212,063
Nov. 1.	69,429	14,800	....	14,919	107,849	7,569	214,566
Dec. 1.	70,837	12,919	....	15,708	106,678	7,625	213,767
1960							
Jan. 1.	73,381	16,955	3,085	16,914	108,002	11,991	230,328
Feb. 1.	78,315	17,139	1,425	19,003	105,292	12,297	233,471
Mar. 1.	89,656	14,899	1,643	19,360	103,615	12,654	241,827
Apr. 1.	96,716	17,043	867	20,603	96,469	12,679	244,377
May 1.	92,969	16,519	1,581	22,124	105,498	12,831	251,522
June 1.	102,454	12,444	889	24,237	109,270	13,878	263,172
July 1.	99,230	15,371	1,461	24,600	116,638	13,221	270,521
Aug. 1.	96,675	19,414	2,302	25,578	122,130	13,728	279,827
Sept. 1.	93,921	25,290	1,175	24,190	124,711	13,654	282,941
Oct. 1.	100,073	27,328	2,106	21,471	126,696	11,888	289,562
Nov. 1.	100,302	28,614	1,647	25,565	129,798	11,540	297,466

Receipts of Lead in Ore and Scrap

By U. S. Smelters (a)

(American Bureau of Metal Statistics)

(In tons of 2,000 lbs.)

	Receipts of lead in ore—			Receipts of lead in scrap etc. (b)	Total receipts in ore, & scrap
	United States	Foreign	Total		
1953 Total	351,183	155,788	506,971	42,994	549,965
1954 Total	336,291	158,081	494,372	49,864	544,236
1955 Total	341,595	172,966	514,561	42,996	557,557
1956 Total	368,499	192,318	560,817	55,925	616,792
1957 Total	356,409	206,901	563,310	42,537	605,847
1958					
August	22,984	13,043	36,027	1,252	37,279
September	20,654	14,576	35,230	1,765	36,995
October	18,678	9,093	27,771	3,577	31,348
November	24,024	14,541	38,565	3,933	42,498
December	24,366	18,804	43,170	3,982	47,152
Total	285,164	188,144	473,308	30,115	503,423
1959					
January	24,304	19,449	43,753	3,138	46,891
February	22,253	8,660	30,913	1,747	32,660
March	21,897	21,012	42,909	1,328	44,237
April	22,339	10,998	33,337	1,196	34,533
May	21,645	5,202	26,847	1,930	28,777
June	23,634	12,368	36,002	2,431	38,433
July	19,165	11,695	30,860	2,199	33,059
August	19,971	2,821	22,792	1,009	23,801
September	13,591	3,465	17,056	32	17,088
October	14,740	3,648	18,388	133	18,521
November	13,808	4,582	18,390	133	18,523
December	21,208	20,977	42,185	5,269	47,454
Total	238,555	124,877	363,432	20,545	383,977
1960					
January	20,531	26,307	46,838	2,041	48,879
February	23,700	15,541	39,241	2,439	41,680
March	28,824	16,742	45,566	2,404	47,970
April	26,574	9,243	35,817	2,212	38,029
May	21,674	16,679	38,353	2,812	41,165
June	20,248	11,694	31,942	2,580	34,522
July	18,831	11,252	30,083	2,237	32,320
August	21,515	8,952	30,467	2,324	32,791
September	24,896	12,192	37,088	2,140	39,228
October	24,101	12,857	36,958	1,487	38,445

(a) Receipts of lead in ore are computed on the basis of recoverable lead. Owing to the estimational factor in this, which is probably on the low side, and also to the possibility that some lead receipts may escape attention, these monthly totals probably understate the actual production of pig lead. (b) Inclusive only of scrap smelted in connection with ore, plus some scrap received by primary refiners.

METALS, DECEMBER, 1960

N. Y. Lead Price Changes

(Effective Date)

1952	June 15....14.00
Apr. 29....18.00	Aug. 25....14.25
May 2....17.00	Sept. 7....14.50
May 12....15.00	Sept. 15....14.75
June 23....15.50	Oct. 4....14.875
June 24....16.00	Oct. 5....15.00
Oct. 7....15.00	1955
Oct. 14....14.00	Sept. 23....15.00-
Oct. 22....13.50	15.50
Nov. 3....14.00	Sept. 26....15.50
Nov. 10....14.20	Dec. 29....16.00
Nov. 11....14.50	1956
Nov. 20....14.25	Jan. 4....16.50
Nov. 24....14.00	Jan. 13....16.00
Dec. 22....14.25	1957
Dec. 29....14.50	May 9....15.50
Dec. 31....14.75	May 16....15.00
1953	June 11....14.00
Jan. 7....14.50	Oct. 14....13.50
Jan. 12....14.00	Dec. 2....13.00
Feb. 2....13.50	1958
Mar. 4....13.90	Apr. 1....12.00
Mar. 10....13.50	May 14....11.50
Apr. 7....13.00	June 3....11.00
Apr. 16....12.50	June 18....11.50
Apr. 21....12.00	July 1....11.00
Apr. 29....12.50	Aug. 13....10.75
May 18....12.75	Sept. 17....11.00
May 19....13.00	Sept. 30....11.50
May 26....13.15	Oct. 2....12.00
June 11....13.50	Oct. 8....12.50
July 20....13.75	Oct. 14....13.00
July 23....14.00	1959
Sept. 16....13.50	Jan. 21....12.00
1954	Feb. 11....11.50
Jan. 18....13.00	Feb. 24....11.00
Feb. 18....12.50	Mar. 5....11.50
Mar. 9....12.75	April 1....11.00
Mar. 10....13.00	April 20....11.50
Mar. 26....13.25	May 7....12.00
Mar. 29....13.50	Aug. 24....13.00
Apr. 1....13.75	Dec. 14....12.50
Apr. 12....14.00	Dec. 21....12.00
June 2....14.25	1960
	Dec. 13....11.00

**OPS Ceiling.

Antimonial Lead Stocks at Primary Refineries

(A.B.M.S.)

	(In tons of 2,000 pounds)			
End of	1957	1958	1959	1960
Jan. ..	10,487	12,689	11,789	12,297
Feb. ..	10,220	12,309	12,111	12,654
Mar. ..	5,091	3,527	4,098	2,332
Apr. ..	9,391	12,468	13,355	12,831
May ..	9,799	13,154	13,596	13,878
June ..	9,503	12,856	12,321	13,221
July ..	8,661	10,482	13,143	13,728
Aug. ..	9,553	10,889	7,915	13,654
Sept. ..	10,215	11,004	7,769	11,888
Oct. ..	11,581	12,050	7,569	11,540
Nov. ..	11,119	11,828	7,625	....
Dec. ..	11,857	12,595	11,991	....

Antimonial Lead Production by Primary Refineries

(A.B.M.S.)

	(In tons of 2,000 pounds)			
End of	1957	1958	1959	1960
Jan. ..	5,114	3,743	3,541	2,538
Feb. ..	5,468	3,657	4,415	2,694
Mar. ..	9,794	12,144	12,065	12,679
Apr. ..	6,183	3,655	5,533	2,291
May ..	6,978	4,827	4,616	3,456
June ..	4,466	3,992	5,671	2,260
July ..	5,372	2,775	2,784	2,363
Aug. ..	7,967	5,244	2,185	2,701
Sept. ..	7,574	4,761	1,021	1,721
Oct. ..	6,148	5,849	886	3,205
Nov. ..	3,791	3,913	1,324	....
Dec. ..	3,290	4,539	2,656	....

Total 67,541 50,482 37,813

Lead Imports and Exports By Principal Countries

(A. B. M. S.)

Reported in pigs, bars, etc.; metric tons except where otherwise noted.

	1960		
	July	Aug.	Sept.
IMPORTS			
U. S. *	20,185	24,264	8,766
Belgium	1,517	.....	.....
Denmark	510	1,078	679
France	5,368	4,881	2,726
Germany (W.)†	8,495	6,912	.....
Italy†	1,300	.....	.....
Netherlands	2,061	2,793	3,043
Norway	943	.....	.....
Sweden	430	848	.....
Switzerland	1,977	1,609	996
U. K.	20,087	20,888	16,442
India**	1,735	2,063	.....

	1960		
	July	Aug.	Sept.
EXPORTS			
U. S. *	18	46	56
Canada	7,955	9,080	1,801
Belgium	3,050	.....	.....
Denmark	29	276	142
France	328	536	299
Germany (W.)†	2,485	2,033	.....
Italy†	1	.....	.....
Netherlands	514	833	525
Sweden	576	1,183	.....
N. Rhodesia**	1,024	1,476	800
Australia	7,918	15,119	.....

* Refined.

† Includes scrap.

‡ Includes lead alloys.

** British Bureau of Non-Ferrous Metal Statistics.

French Lead Imports

(A. B. M. S.)

(In metric tons)

	1960		
	Aug.	Sept.	Oct.
Ore (gross weight)	7,580	9,194	4,952
Canada .....	.....	.....	957
Algeria .....	.....	70	.....
Morocco	6,186	9,124	3,995
Other countries	1,394	.....	.....
Pig lead	4,881	2,726	4,683
Peru .....	.....	102	.....
Belgium	1,517	997	1,602
Germany (W.)	517	500	275
Spain .....	.....	100	100
Algeria .....	.....	6	30
Morocco	1,114	325	905
Tunisia	1,733	417	1,767
Australia .....	.....	279	.....
Other countries .....	.....	.....	4
Antimonial lead	17	1	25

U. K. Lead Imports

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 tons)

	1960		
	Aug.	Sept.	Oct.
(Gross Weight)			
Lead and lead alloys	20,888	16,442	19,626
Australia	13,962	10,263	10,591
Canada	4,037	2,845	3,724
Belgium .....	.....	.....	300
Peru	750	699	700
Other countries	2,139	2,635	4,311

**IT PAYS
to
ADVERTISE
in the
DAILY METAL REPORTER**

U. S. Lead Consumption

(Bureau of Mines — In Short Tons)

Metal Products:	1960		
	Jan.-Sept.	Aug.	Sept.
Ammunition	32,890	3,026	3,737
Bearing metals	15,871	1,749	1,643
Brass and bronze	15,459	1,753	1,609
Cable covering	45,272	5,293	4,999
Calking lead	52,264	7,003	5,891
Casting metals	5,080	590	450
Collapsible tubes	6,170	749	984
Foil	2,939	287	241
Pipes, traps, and bends	17,545	1,989	1,815
Sheet lead	20,780	2,850	2,406
Solder	43,950	4,630	4,686
Storage battery grids, posts, etc.	126,801	14,708	14,556
Storage battery oxides	131,400	15,231	14,648
Terne metal	1,615	199	35
Type metal	19,316	2,138	2,104
Total	537,352	62,195	59,804

Pigments:			
White lead	6,671	777	881
Red lead and litharge	68,061	6,732	5,202
Pigment colors	8,874	1,047	922
Other*	1,971	282	210
Total	75,577	8,838	7,215

Chemicals:			
Tetraethyl lead	124,163	15,132	14,944
Miscellaneous chemicals	1,918	463	436
Total	126,081	15,595	15,380

Miscellaneous uses:			
Annealing	3,438	366	359
Galvanizing	965	89	91
Lead plating	39	2	2
Weights and ballast	5,630	600	705
Total	10,072	1,057	1,157
Other uses unclassified	12,646	1,244	1,319
Total reported†	761,728	88,929	84,875
Estimated undistributed consumption	18,000	2,000	2,000
Grand total†	779,700	90,900	86,900
Daily average‡	2,846	2,932	2,897

* Includes lead content of leaded zinc oxide production.

† Includes lead content of scrap used directly in fabricated products.

‡ Based on number of days in month without adjustment for Sundays and holidays.

Consumers' Lead Stocks, Receipts and Consumption

(Bureau of Mines — In Short Tons)

	Stocks Aug. 31, 1960	Net Receipts in Sept.	Consumed in Sept.	Stocks Sept. 30, 1960
Soft lead	77,205	48,537	56,713	69,029
Antimonial lead	42,766	18,651	20,740	40,677
Lead in alloys	7,480	3,126	3,220	7,386
Lead in copper-base scrap	924	1,359	1,251	1,032
Total	128,375	71,673	*81,924	118,124

* Excludes 2,748 tons of lead which went directly from scrap to fabricated products and 203 tons of lead contained in leaded zinc oxide production.

Consumption of Lead by Class of Product

(Bureau of Mines — In Short Tons)

	SEPTEMBER				Total
	Soft lead	Antimonial lead	Lead in alloys	Lead in copper-base scrap	
Metal products	32,476	20,199	3,163	1,251	57,089
Pigments	7,005	7	.....	.....	7,012
Chemicals	15,380	.....	.....	.....	15,380
Miscellaneous	638	494	25	.....	1,157
Unclassified	1,214	40	32	.....	1,286
Total	56,713	20,740	3,220	1,251	*81,924

* Excludes 2,748 tons of lead which went directly from scrap to fabricated products and 203 tons of lead contained in leaded zinc oxide production.

U. K. Lead Consumption

(British Bureau of Non-Ferrous Metal Statistics)

	(In tons of 2,240 pounds)		
	1958	1959	1960
Jan.	29,607	28,872	31,745
Feb.	27,855	25,968	30,241
Mar.	29,713	26,691	35,066
Apr.	26,230	29,252	28,148
May	28,839	27,280	33,459
June	28,624	30,099	33,318
July	27,201	26,851	27,913
Aug.	21,726	25,358	28,735
Sept.	28,829	30,255	34,274
Oct.	31,356	32,926	32,680
Nov.	27,786	32,579	...
Dec.	27,154	31,772	...

Total .. 335,920 345,903

American Antimony

Monthly Average Prices

In bulk, f.o.b. Laredo

(Cents per lb. in ton lots)

	1957	1958	1959	1960
Jan.	33.00	33.00	29.00	29.00
Feb.	33.00	30.818	29.00	29.00
Mar.	33.00	29.00	29.00	29.00
Apr.	33.00	29.00	29.00	29.00
May	33.00	29.00	29.00	29.00
June	33.00	29.00	29.00	29.00
July	33.00	29.00	29.00	29.00
Aug.	33.00	29.00	29.00	29.00
Sept.	33.00	29.00	29.00	29.00
Oct.	33.00	29.00	29.00	29.00
Nov.	33.00	29.00	29.00	29.00
Dec.	33.00	29.00	29.00	...
Aver.	33.00	29.485	29.00	...

Domestic Zinc Statistics

American Zinc Institute

Commencing with January, 1948, all regularly operating U. S. primary and secondary smelters are included in this report. Production from foreign ores also is included. (Tons of 2,000 lbs.)

	Stock Begin- ning	Pro- duction	Shipments				Stock at End	Daily Avg. Prod.
			Domes- tic	Export & Drawback	Gov't Acct	Total		
1950 Total	94,221	910,854	849,246	18,139	128,256	995,691	8,884	2,494
1950 Mo. Avg.		75,863	70,770	1,516	10,688	82,974		
1951 Total	8,884	931,833	836,800	42,067	39,945	918,816	21,901	2,553
1951 Mo. Avg.		77,653	69,733	3,506	3,329	76,568		
1952 Total	21,901	961,430	803,343	56,202	36,826	896,171	87,160	2,627
1952 Mo. Avg.		80,119	66,945	4,633	3,052	74,631		
1953 Total	87,160	971,191	818,850	16,326	42,332	877,508	180,843	2,661
1953 Mo. Avg.		80,933	68,238	1,361	3,528	73,126		
1954 Total	180,843	868,242	787,922	27,929	108,957	924,808	124,277	2,379
1954 Mo. Avg.		72,353	65,660	2,327	9,080	77,067		
1955 Total	40,979	1,031,018	1,007,619	19,497	87,200	1,114,316	40,979	2,825
1955 Mo. Avg.		85,918	83,968	1,625	7,267	92,860		
1956 Total		1,062,954	869,270	9,027	157,014	1,035,311	68,622	2,904
1956 Mo. Avg.		88,560	72,439	752	13,085	86,275		
1957 Total		1,067,450	765,182	15,460	179,466	815,567		
1958								
September	251,529	63,705	76,905	213	....	77,118	238,116	2,124
October	238,116	65,304	83,018	226	....	93,224	210,176	2,107
November	210,176	65,174	83,394	212	....	83,606	191,744	2,172
December	191,744	75,603	76,862	148	....	77,010	190,237	2,432
1958 Total		828,902	767,755	8,102	34,488	805,325	....	....
1959								
January	190,237	76,481	70,770	171	....	70,941	195,777	2,467
February	195,777	71,174	65,641	849	....	66,490	200,461	2,542
March	200,461	79,918	73,814	482	....	74,296	206,083	2,578
April	206,083	76,393	78,358	255	....	78,613	203,863	2,546
May	203,863	77,489	85,073	275	....	85,348	196,004	2,500
June	196,004	75,544	99,858*	204	2,100	102,162	169,386	2,518
July	169,386	73,101	59,460	94	900	60,454	182,033	2,358
August	182,033	69,768	58,918	864	....	59,782	192,019	2,251
September	192,019	62,202	87,971	8214	....	61,185	193,036	2,073
October	193,036	63,938	63,910	1,813	....	65,723	191,251	2,063
November	191,251	62,346	74,596	2,844	....	77,440	176,157	2,078
December	176,157	69,666	84,498	6,906	....	91,404	154,419	2,247
1959 Total		858,020	872,867	17,971	3,000	893,838	....	....
1960								
January	154,419	73,326	79,325	3,949	....	83,274	144,471	2,365
February	144,471	74,738	79,029	4,118	....	82,147	137,062	2,577
March	137,062	86,028	80,760	5,764	....	86,524	136,566	2,775
April	136,566	83,221	64,251	7,675	....	71,926	147,861	2,774
May	147,861	79,216	54,790	7,399	....	62,039	165,038	2,555
June	165,038	76,723	50,690	3,385	....	54,075	187,686	2,557
July	187,686	73,754	50,002	4,379	....	54,381	207,059	2,379
August	207,059	63,840	64,287	5,908	....	70,255	200,644	2,128
September	200,644	60,004	58,137	10,045	....	68,182	192,466	2,000
October	192,466	63,005	58,572	6,611	....	65,183	190,288	2,032
November	190,288	60,841	56,981	11,999	....	68,980	182,149	2,028

* Inflated by abnormal shipments on consignment of approximately 9,000 tons.

U. S. Consumption of Slab Zinc

Bureau of Mines
By Industries (Short Tons)

	Galvan- izers	Die Casters	Brass products	Rolled zinc	Zinc oxide & other	Total
1951 Total	386,373	266,442	141,456	64,000	28,738	887,009
1952 Total	375,563	236,022	155,311	51,508	30,885	849,289
1953 Total	403,162	305,346	177,301	53,784	33,037	977,636
1954 Total	398,599	286,817	107,293	45,979	33,342	876,130
1955 Total	439,694	404,790	144,816	50,363	39,302	1,081,468
1956 Total	421,218	352,451	122,395	45,382	36,251	983,097
1957 Total	355,796	358,543	111,114	39,544	20,486	924,063
1958						
August	34,663	20,382	8,358	3,379	1,901	70,033
September	34,048	25,188	9,624	3,458	770	74,122
October	36,513	27,682	11,753	3,845	881	81,919
November	31,658	27,311	10,067	3,276	826	74,302
December	31,746	29,926	10,529	3,681	1,018	78,082
Total	370,441	273,540	92,906	38,690	16,772	737,942
1959						
January	31,729	29,110	11,172	3,874	2,521	79,506
February	31,672	26,448	11,508	3,418	2,864	77,010
March	37,287	29,286	12,889	3,629	3,203	87,394
April	38,541	31,262	12,304	3,715	3,223	90,145
May	38,788	29,169	12,015	3,316	3,305	88,093
June	40,531	36,269	10,764	3,801	3,120	95,985
July	23,700	28,120	7,558	2,509	2,042	65,429
August	13,763	29,803	10,064	3,160	2,161	60,451
September	13,181	31,463	10,842	3,322	2,237	62,545
October	13,582	35,473	10,543	3,272	2,487	66,857
November	25,456	29,351	8,858	3,411	2,523	71,099
December	38,418	34,576	8,704	3,152	2,936	89,286
Total	346,648	370,330	127,221	40,759	22,622	933,800
1960						
January	38,389	31,813	9,838	3,130	3,352	88,122
February	35,001	34,829	9,259	3,250	3,156	87,365
March	36,206	31,889	10,108	3,309	3,403	86,515
April	31,319	24,483	7,097	3,032	3,033	71,164
May	31,503	22,957	7,697	3,402	3,386	70,545
June	31,882	25,625	8,541	3,181	2,814	73,883
July	24,735	18,895	4,610	2,118	2,979	55,237
August	28,157	25,560	8,307	3,258	1,331	68,513
September	26,210	26,936	8,035	2,435	2,407	67,023

METALS, DECEMBER, 1960

Prime Western Zinc Prices (East St. Louis, f.o.b.)

	(Cents Per Pound) (In tons of 2,240 pounds)			
	1957	1958	1959	1960
Jan.	13.50	10.00	11.50	12.90
Feb.	13.50	10.00	11.41	13.00
Mar.	13.50	10.00	11.00	13.00
Apr.	13.50	10.00	11.00	13.00
May	11.933	10.00	11.00	13.00
June	10.84	10.00	11.00	13.00
July	10.00	10.00	11.00	13.00
Aug.	10.00	10.00	11.00	13.00
Sept.	10.00	10.00	11.381	13.00
Oct.	10.00	10.865	12.233	13.00
Nov.	11.35	12.386	13.75	14.35
Dec.	10.00	11.50	12.50	...
Aver.	11.40	10.313	11.46	...

High Grade Zinc Prices

	(Delivered) N. Y. Monthly Averages (Cents Per Pound)			
	1957	1958	1959	1960
Jan.	14.85	11.35	12.50	14.244
Feb.	14.85	11.35	12.411	14.25
Mar.	14.85	11.35	12.00	14.25
Apr.	14.85	11.084	12.00	14.50
May	13.283	11.00	12.00	14.50
June	12.19	11.00	12.00	14.50
July	11.35	11.00	12.00	14.35
Aug.	11.35	11.00	12.006	14.35
Sept.	11.35	11.00	12.625	14.35
Oct.	11.35	11.865	13.483	14.35
Nov.	11.35	12.386	13.75	14.35
Dec.	11.35	12.50	13.75	...
Aver.	12.75	11.407	12.544	...

U. K. Zinc Consumption

	(British Bureau of Non-Ferrous Metal Statistics) (In Tons of 2,240 Pounds)		
	1958	1959	1960
Jan.	27,473	27,849	30,637
Feb.	24,551	25,676	30,480
Mar.	26,967	27,243	35,268
Apr.	24,984	28,006	28,069
May	24,579	26,167	30,848
June	25,587	30,221	33,058
July	23,794	26,318	25,594
Aug.	19,076	21,566	25,764
Sept.	26,747	31,270	33,163
Oct.	29,838	30,686	30,598
Nov.	26,432	29,221	...
Dec.	26,042	30,829	...
Total	306,070	335,890	...

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DAILY METAL REPORTER

Mine Production of Zinc in United States

(U. S. Bureau of Mines)

	(In short tons)			
	Eastern States	Central States	Western States	Total U.S.*
1954 Total	166,487	63,100	234,942	464,539
1955 Total	163,230	73,630	277,811	514,671
1956 Total	175,310	61,080	301,253	537,643
1957 Total	196,877	29,506	290,151	520,128
1958 Total	180,373	10,050	221,582	412,005
1959				
May	19,150	—	19,201	38,351
June	18,217	—	18,447	36,664
July	13,158	—	18,656	31,814
Aug.	14,410	140	16,661	31,211
Sept.	14,226	154	15,026	29,406
Oct.	15,608	200	15,979	31,487
Nov.	18,285	200	15,698	34,183
Dec.	19,609	106	15,757	35,472
1960 Total	204,384	800	211,781	416,965
1960				
Jan.	20,962	226	15,795	36,983
Feb.	21,001	195	16,823	38,019
Mar.	22,794	347	19,725	42,866
Apr.	22,410	606	17,839	40,855
May	23,103	408	17,235	40,746
June	22,004	575	16,491	39,070
July	21,083	823	15,036	36,942
Aug.	18,805	902	13,704	33,411
Sept.	16,525	853	12,802	30,180

*Includes Alaskan output in some months.

Mine Production of Lead in United States

(U. S. Bureau of Mines)

	(In short tons)			
	Eastern States	Central States	Western States	Total U.S.*
1953 Ttl.	9,970	136,650	188,776	335,412
1954 Ttl.	8,608	138,940	169,804	317,352
1955 Ttl.	10,379	145,640	177,409	333,409
1956 Ttl.	11,395	141,900	195,034	348,329
1957 Ttl.	9,300	135,800	188,392	333,493
1958 Ttl.	6,439	118,114	142,824	267,377
1959				
July	369	8,190	11,010	19,569
Aug.	353	9,762	11,735	21,850
Sept.	510	9,698	10,328	20,536
Oct.	548	10,012	10,755	21,315
Nov.	620	9,350	10,954	20,924
Dec.	550	8,734	10,572	19,856
1960 Ttl.	6,535	105,435	141,290	253,260
1960				
Jan.	535	9,035	11,235	20,805
Feb.	555	9,611	12,267	22,433
Mar.	619	11,146	13,695	25,460
Apr.	647	9,716	12,750	23,113
May	624	9,395	10,720	20,738
June	585	9,749	9,002	19,356
July	598	8,301	8,462	17,361
Aug.	...	...	...	18,460
Sept.	...	...	...	18,079
Oct.	...	...	...	17,735

Mine Production of Gold in United States

(U. S. Bureau of Mines)

	(In fine ounces)			
	Eastern States	Western States	Alaska*	Total
1955 Ttl.	2,026	1,634,625	247,535	1,884,186
1956 Ttl.	1,998	1,607,930	204,300	1,814,228
1957 Ttl.	2,174	1,556,450	210,000	1,768,624
1959				
June	—	—	23,792	163,057
July	—	—	33,324	171,749
Aug.	—	—	37,534	146,907
Sept.	—	—	30,886	114,364
Oct.	—	—	29,349	117,314
Nov.	—	—	2,903	91,175
Dec.	—	—	17,294	106,525
1960 Ttl.	—	—	188,294	1,618,446
1960				
Jan.	—	—	2,460	—
Feb.	—	—	1,064	108,652
Mar.	—	—	231	120,928
Apr.	—	—	43	121,017
May	—	—	4,919	141,861
June	—	—	5,504	140,058
July	—	—	28,493	156,573
Aug.	—	—	33,033	153,163
Sept.	—	—	35,480	175,374

*Alaska totals based on mint and smelter receipts.

U. S. Silver Production* (A.B.M.S.)

	(In thousands of ounces; commercial bars, 0.999 fine, and other refined forms)		
	Dom.†	For.	Total
1954 Total	38,059	39,422	77,481
1955 Total	33,101	32,780	65,881
1956 Total	38,157	40,160	78,317
1957 Total	36,279	34,932	71,211
1958 Total	35,691	37,572	73,263
1959			
May	2,641	3,484	6,125
June	3,219	3,231	6,450
July	2,609	3,284	5,893
August	1,472	1,229	2,701
September	390	577	967
October	510	610	1,120
November	635	602	1,237
December	756	4,311	5,067
Total	23,158	32,021	55,179
1960			
January	3,327	2,830	6,157
February	3,454	3,496	6,950
March	4,010	4,259	8,269
April	3,866	4,158	8,024
May	3,425	4,018	7,443
June	3,278	3,924	7,202
July	2,817	3,799	6,616
August	3,115	4,293	7,408
September	2,145	2,872	5,287
October	2,918	3,165	6,083

* The separation between silver of foreign and domestic origin on the basis of refined bars and other refined forms is only approximate.

† Includes purchases of crude silver by the U. S. Mint.

Mine Production of Recoverable Silver in United States

(U. S. Bureau of Mines)

	(In Fine Ounces)			
	Eastern States	Missouri	Western States	Total
1957 Total	610,386	240,000	37,018,950	37,895,336
1958 Total	†	210,000	†	28,000
1959				
July	†	8,900	†	4,149
August	†	10,600	†	5,523
September	†	10,400	†	3,224
October	†	10,900	†	3,793
November	†	10,400	†	469
December	†	10,140	†	2,334
1960 Total	†	169,000	†	24,134
1960				
January	†	18,300	†	321
February	†	200	†	312
March	†	100	†	17
April	†	100	†	5
May	†	100	†	627
June	†	200	†	753
July	†	200	†	4,033
August	†	200	†	5,004
September	†	200	†	4,764

† Figures not available.

* Alaska totals based on mint and smelter receipts.

Production of Primary Aluminum in the U. S.

(U. S. Bureau of Mines)

	(In short tons)							
	1953	1954	1955	1956	1957	1958	1959	1960
Jan.	89,895	116,247	128,203	140,394	147,029	139,910	156,708	164,024
Feb.	92,649	110,483	116,236	132,763	119,059	121,980	142,116	156,826
Mar.	104,460	122,339	130,272	145,895	135,706	134,019	157,189	170,688
Apr.	102,071	120,434	126,394	144,726	139,152	128,559	155,213	168,596
May	105,464	125,138	131,128	150,800	145,174	129,083	163,857	175,863
June	104,152	120,758	127,634	145,726	138,007	115,325	167,323	171,356
July	109,285	126,161	132,669	151,624	142,157	118,811	179,594	177,564
Aug.	110,545	125,296	133,551	152,406	143,449	125,416	172,817	172,973
Sept.	109,333	120,332	130,606	132,316	129,278	124,713	168,205	162,882
Oct.	108,219	125,089	134,655	149,125	133,759	139,847	173,762	167,015
Nov.	105,636	121,252	133,689	145,081	135,024	140,962	153,666	...
Dec.	110,291	127,056	140,748	148,391	140,033	153,301	162,996	...
Ttl.	1,252,013	1,460,565	1,565,721	1,679,427	1,647,710	1,655,556	1,953,019	...

Average Silver Prices

	(Cents per fine ounce)			
	1957	1958	1959	1960
Jan.	91.375	89.449	90.19	91.375
Feb.	91.375	88.625	90.444	91.375
Mar.	91.375	88.625	91.351	91.375
Apr.	91.375	88.625	91.375	91.375
May	91.307	88.625	91.375	91.375
June	90.456	88.625	91.375	91.375
July	90.31	88.625	91.375	91.375
Aug.	90.909	88.625	91.399	91.375
Sept.	90.602	88.673	91.399	91.375
Oct.	90.625	89.966	91.375	91.375
Nov.	90.382	90.125	91.375	91.375
Dec.	89.80	89.932	91.375	...
Aver.	90.824	89.043	91.226	...

Note — The averages are based on the price of refined bullion imported on or after August 31, 1945.

U. S. Lead Imports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	1960		
	Aug.	Sept.	Oct.
Ore, matte, etc. (cont.)	11,428	16,102	9,897
Canada	1,508	1,945	1,604
Mexico	104	149	49
Guatemala	...	176	...
Honduras	520	457	76
Bolivia	1,179	1,128	1,186
Chile	79	...	...
Colombia	...	...	353
Peru	1,916	4,086	1,617
Union of South Africa	4,486	7,957	3,730
Australia	1,612	12	1,179
Philippines	...	5	58
Korea	...	175	45
Other countries	24	12	...
Pigs and bars	24,264	8,766	12,915
Canada	2,945	50	2,194
Mexico	8,006	4,673	4,770
Peru	2,196	4,043	2
Spain	...	...	1,229
Yugoslavia	6,672	...	2,470
Australia	4,445	...	2,241
Other countries	...	...	9

Total Imports:

Ore, base bullion, ref.	35,692	24,868	22,812
Lead scrap, dross, etc. (content)	553	213	1,418
Antimonial lead and typemetal	459	364	237
Lead content thereof	363	293	185

U. S. Copper Scrap Exports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	1960		
	Aug.	Sept.	Oct.
Copper scrap, unalloyed* (new and old)	5,996	5,033	5,273
Canada	111	315	1,993
Belgium	445	336	195
France	60	66	34
Germany (West)	1,929	845	1,043
Italy	286	161	81
Netherlands	160	151	155
Spain	954	585	710
Sweden	502	201	100
Yugoslavia	435	58	17
United Kingdom	191	300	44
India	91	111	66
Japan	751	1,802	753
Other countries	81	102	82
Copper-base scrap, alloyed† (new and old)	13,611	12,537	12,075
Canada	21	3	...
Mexico	188	64	5
Belgium	...	...	48
France	...	11	107
Germany (West)	1,321	671	675
Italy	1,106	845	776
Netherlands	337	36	375
Spain	...	55	5
Switzerland	99	78	146
United Kingdom	115	69	56
India	182	223	84
Japan	10,242	10,441	9,703
Hong Kong	...	16	...
Other countries	...	25	95

* Ash, brass mill, clippings, dross, flue dust, residues, scale, skimmings, wire scrap.

† Copper-base alloys, including brass and bronze — Ashes, clippings for remanufacture, cupro-nickel scrap, cupro-nickel trimmings, nickel silver scrap, phosphor bronze, phosphor copper, skimmings, turnings, round.

METALS, DECEMBER, 1960

U. S. Copper Imports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	1960		
	Aug.	Sept.	Oct.
Ore, matte and regulus (content)	4,036	7,105	1,919
Canada	1,238	545	605
Mexico	109	2	119
Bolivia	...	198	...
Chile	1,311	1,221	...
Peru	321	1,069	220
Philippines	1	2,341	16
Union of South Africa	933	1,729	922
Australia	121	...	37
Other countries	2	...	...
Blister copper (cont.)	41,712	21,323	39,556
Mexico	2,185	2,098	2,057
Chile	28,120	15,127	25,432
Peru	10,574	2,434	12,067
Union of South Africa	833	1,664	...
Refined cathodes and shapes	8,975	7,675	6,607
Canada	8,668	7,675	6,607
Peru	251	...	...
Rhodesia & Nyasaland	56	...	...
Total Imports:			
Crude and refined	54,723	36,103	48,082
Old and scrap (cont.)	235	24	93
Composition metal (content)	...	1	...
Brass scrap and old (cu. cont.)	227	123	93

U. S. Copper Exports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	1960		
	Aug.	Sept.	Oct.
Ore, concentrates, matte and other unrefined (content)	255	1,524	840
Refined ingots, bars, etc.*	58,720	42,919	37,207
Canada	35	157	66
Mexico	2	...	...
Argentina	2,604	1,475	1,716
Brazil	1,336	1,665	1,784
Austria	...	3	...
Belgium	672	336	425
Denmark	252	167	28
Finland	783	529	...
France	10,742	6,502	5,052
Germany (West)	12,474	9,029	11,237
Greece	112	64	...
Italy	7,488	5,999	5,824
Netherlands	2,490	1,987	812
Norway	280	336	112
Sweden	622	168	852
Switzerland	1,398	616	916
United Kingdom	10,126	7,793	5,255
Yugoslavia	1,566	792	198
Taiwan	535	161	55
India	1,670	151	...
Japan	2,956	4,128	2,040
Australia	559	896	672
Other countries	132	15	99

Total Exports:

Crude and refined	58,975	44,443	38,047
Pipes and tubes	47	105	49
Plates and sheets	31	58	71
Semifabricated forms	769	601	481
Wire, bars	306	163	604
Building wire and cable†	76	259	135
Weatherproof wire†	2	1	...
Insulated copper wire n.e.s.†	3,184	382	720

* Includes exports of refined copper resulting from scrap that was reprocessed on toll for account of the shipper.

† Gross weight; n.e.s.—not elsewhere specified.

Comparative Metal Prices

	OPA		
	Av. 1939	Av. 1946	Dec. 20 1960
Copper, domestic Electro., del. Val.	11.20	14.875	30.00
Lead (N. Y.)	5.05	8.25	11.00
P. W. Zinc (E. St. Louis, f.o.b.)	5.05	5.05	12.00
New York, del.	...	...	12.50
Tin Spot Straits, N. Y.	...	...	101.375
Aluminum ingot 99½%+	20.00	15.00	26.00
Antimony (R.M.M. brand f.o.b. Laredo)	12.36	14.50	29.00

U. S. Zinc Imports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	1960		
	Aug.	Sept.	Oct.
Zinc ore (content)	35,632	40,558	30,391
Canada	11,508	9,200	10,538
Mexico	17,489	12,138	13,462
Guatemala	...	1,744	...
Honduras	461	633	460
Bolivia	52	188	44
Colombia	...	...	39
Chile	3	...	...
Peru	4,128	10,729	3,163
Union of South Africa	643	1,038	1,092
Australia	502	4,201	306
Philippines	835	664	1,285
Other countries	11	23	2
Zinc blocks, pigs, etc.	8,134	17,272	7,923
Canada	5,625	10,854	4,519
Mexico	686	500	...
Peru	170	1,709	100
Belgium	...	112	496
Germany (West)	...	110	1,129
Italy	496	...	...
Spain	...	1,378	1,432
United Kingdom	...	56	...
Yugoslavia	716	551	192
Belgium Congo	441	2,002	55
Total Imports:			
Zinc ore, blocks, pigs, dross and skimmings	43,766	57,830	38,314
Old and worn out	112	107	80
Old and worn out	16	...	14

U. S. Zinc Exports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	1960		
	Aug.	Sept.	Oct.
Ore, conc. (cont.)	1	1	11
Slabs, blocks, etc.	7,601	9,110	4,827
Canada	1	2	3
Mexico	132	39	...
Cuba	55	...	...
Brazil	172	302	141
Colombia	265	...	...
Belgium	...	3	...
Germany (West)	112	...	3
Italy	336	...	...
Netherlands	224	168	...
Sweden	700	616	449
United Kingdom	3,659	327	2,987
Philippines	435	...	...
Japan	...	7,405	258
Korea	...	...	75
India	1,225	192	611
Other countries	285	56	300
Total Exports:			
Ore, conc., slabs and skimmings	7,602	9,111	4,838
Scrap, ashes, dross and skimmings	2,032	1,426	412
Rolled in sheets, plates & strips & die castings	137	238	308
Zinc and zinc alloys in crude and semifabricated forms	369	146	161
Zinc oxide	171	202	113

U. S. Lead Exports

(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	1960		
	Aug.	Sept.	Oct.
Lead, ore, concentrates, matte and base bullion (content)	9	1,114	7
Mexico	9	14	7
Other countries	...	1,100	...
Pigs and bars	46	56	482
Canada	...	1	...
Mexico	2	32	3
Cuba	...	7	...
Guatemala	33	...	...
Colombia	...	3	...
Peru	4	1	1
Philippines	...	...	7
Taiwan	...	...	450
Other countries	7	12	21

Total Exports:

Ore, base bullion, ref.	55	1,170	489
Scrap	32	355	827
Lead plate, including battery plate, not assembled as complete battery units	1	33	3
Rabbit metal	3	6	8
Lead and lead base alloys in semifabricated forms	15	37	28

World Production of Copper

(American Bureau of Metal Statistics)

(In Tons of 2,000 Pounds)

	United States	Canada	Mexico (crude)	Chile	Peru	Fed. Rep. of Germany	Norway	United Kingdom	Yugoslavia	India	Japan	Turkey	Australia	Northern Rhodesia	Union of South Africa
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)
1955															
Total	1,036,702	326,599	61,583	447,288	35,478	286,905	14,876	138,271	31,151	8,432	124,908	26,313	41,935	350,302	47,176
1956															
Total	1,133,134	366,261	69,918	506,251	35,005	279,461	16,487	127,365	32,390	8,827	139,062	27,101	55,711	435,186	47,914
1957															
Total	1,115,483	360,745	42,905	....	46,141	255,710	17,265	121,799	37,186	9,298	143,654	27,101	55,633	499,418	47,828
1958															
Total	1,881,170	346,816	68,386	462,064	42,750	295,312	19,529	106,134	37,116	9,062	136,612	24,676	72,361	426,513	53,090
1959															
June	99,419	36,979	5,847	46,901	3,357	24,635	1,743	10,909	3,231	776	18,621	2,362	8,133	53,896	4,766
July	81,662	36,067	5,755	45,508	3,676	25,890	1,639	7,108	3,369	781	18,967	1,846	5,346	48,806	4,541
Aug.	51,327	35,045	5,326	50,093	2,533	24,716	1,677	6,610	1,810	774	18,805	2,378	5,798	50,285	4,357
Sept.	19,503	35,740	4,125	44,439	8,782	25,357	1,986	10,438	3,619	799	18,837	2,427	7,111	48,753	3,742
Oct.	20,931	35,980	4,968	36,449	3,061	27,840	1,800	8,951	3,137	804	18,898	2,304	....	49,519	3,025
Nov.	18,351	35,271	4,886	59,877	2,904	25,535	1,495	10,076	3,451	802	17,186	2,923	....	49,232	5,005
Dec.	26,686	34,416	4,872	53,186	8,438	28,143	2,035	8,736	2,403	421	20,498	....	....	48,350	5,244
1960															
Jan.	64,098	36,404	4,326	47,550	2,901	27,222	1,941	7,489	3,310	769	21,096	....	4,702	56,495	5,061
Feb.	85,899	35,824	4,817	43,380	3,579	25,288	1,954	8,719	3,013	831	....	....	6,915	47,322	3,017
Mar.	107,895	35,341	5,376	49,124	15,956	30,386	2,008	8,453	3,617	913	22,968	2,723	6,310	52,332	4,292
Apr.	104,895	34,289	4,672	50,010	16,501	26,915	1,905	9,640	3,177	808	21,563	2,480	....	54,595	4,738
May	104,272	36,892	4,800	39,580	16,198	29,897	2,038	12,379	3,375	838	18,077	....	....	55,596	4,706
June	95,522	37,016	5,061	43,826	13,259	28,011	1,877	11,720	2,982	820	23,314	1,550	7,149	54,616	4,494
July	91,238	38,452	4,515	50,251	14,544	27,869	1,822	7,844	3,935	878	23,498	3,480	8,060	54,982	4,327
Aug.	84,579	37,996	4,737	49,342	12,544	29,921	1,858	10,165	....	856	23,395	....	6,029	56,053	4,421
Sept.	96,503	34,558	4,873	52,387	18,453	27,851	....	14,514	....	848	23,564	....	....	50,937	....
Oct.	101,977	....	4,999	....	20,377	....	....	....	....	....	....	....	....	52,344	....

(a) Reported by Copper Institute. Crude, "recoverable contents of mine production or smelter production or shipments, and custom intake." Does not include intake of scrap nor of imported or exported except that received from Cuba and Philippines. (b) Blister copper plus recoverable copper in concentrates, matte, etc., exported. (c) Crude copper, i. e., copper content of blister or converter copper as originally produced in the several countries, although some of it may be refined at home; e. g., in Rhodesia. (d) Blister and/or refined. (e) Refined. There are quantities of scrap included in the electrolytic production in addition to that reported, tonnage of which is not obtainable. (f) Smelter production. (g) Refinery production from imported blister only. (h) British Bureau of Non-Ferrous Metal Statistics. * Refined.

World Production of Refined Lead

(American Bureau of Metal Statistics)

(In Tons of 2,000 Pounds)

	United States	Canada	Mexico	Peru	Belgium	France	Fed. Rep. of Germany	Italy	Spain	Yugoslavia	Japan	Australia	French Morocco	Tunisia	Rhodesia	Total
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)
1955																
Total	547,153	148,811	221,138	67,303	91,241	73,251	162,508	46,806	67,509	83,347	40,912	254,558	28,870	28,620	17,976	1,893,125
1956																
Total	613,293	147,865	213,524	61,917	111,479	73,251	178,713	42,780	64,824	83,507	51,019	256,300	30,993	26,623	17,024	1,984,344
1957																
Total	604,533	142,935	218,266	55,971	....	94,509	195,136	42,336	61,332	85,313	59,670	261,035	34,442	27,069	12,364	2,041,530
1958																
Total	575,612	130,886	246,443	80,999	119,192	111,337	223,973	60,860	77,450	92,903	52,915	271,654	42,266	32,359	16,492	1,955,753
1959																
June	37,459	12,997	20,000	6,540	9,125	6,976	18,128	2,463	6,510	7,854	6,349	25,151	1,552	926	1,344	164,815
July	32,882	8,096	17,099	6,401	8,734	6,065	16,381	4,394	6,074	2,221	5,303	19,125	2,859	1,749	1,344	139,291
Aug.	25,589	7,357	19,086	4,267	7,547	6,581	15,256	3,354	6,049	8,645	5,344	21,168	862	2,863	1,344	136,725
Sept.	14,801	9,775	14,320	4,354	7,217	6,164	17,773	4,502	4,728	8,731	5,322	22,786	3,567	2,352	1,344	128,850
Oct.	18,892	9,897	17,988	6,093	7,107	6,004	18,070	4,310	6,193	....	4,663	24,226	3,466	2,669	1,344	....
Nov.	18,796	9,674	18,223	6,199	7,766	6,431	17,820	4,310	6,193	8,273	4,594	24,226	3,466	2,669	1,344	141,370
Dec.	30,160	10,071	16,448	5,826	7,708	6,581	19,726	4,638	6,639	11,893	6,865	25,448	3,869	2,066	1,344	....
1960																
Jan.	40,043	11,664	15,821	6,127	8,450	6,818	19,424	3,128	7,284	6,896	6,699	26,233	2,448	....	1,309	163,457
Feb.	36,435	12,459	17,371	6,063	8,746	6,276	17,907	4,260	6,468	7,167	....	24,964	2,267	1,047	1,316	....
Mar.	37,192	13,967	13,687	7,154	9,561	8,500	19,743	3,716	6,249	7,804	7,034	19,307	2,916	1,774	1,348	161,625
Apr.	40,177	13,261	17,715	6,945	9,357	9,716	19,202	3,607	6,886	6,382	6,607	19,663	3,053	2,663	1,347	168,049
May	36,509	13,467	18,736	6,905	9,406	9,370	20,299	4,074	....	6,865	6,086	22,065	3,103	1,241	1,354	....
June	33,448	13,017	14,320	6,695	8,247	8,343	16,372	3,387	4,870	8,503	6,763	19,649	2,423	1,813	1,355	150,774
July	29,270	11,494	15,523	7,000	6,897	8,818	17,036	4,029	4,624	9,125	7,221	23,530	3,835	2,922	1,408	153,276
Aug.	22,623	13,218	16,639	6,008	5,915	2,205	15,794	3,425	7,317	....	6,656	....	1,463	837	1,344	....
Sept.	29,638	....	14,722	6,384	6,394	9,048	18,393	3,837	7,109	....	6,526	....	2,148	2,215	1,393	....
Oct.	33,336	....	14,236	6,890	....	9,634	....	....	....	....	....	....	4,511	2,245	1,376	....

(a) Production credited to Australia includes lead refined in England from Australian base bullion.

World Production of Slab Zinc

(American Bureau of Metal Statistics)

(In Tons of 2,000 Pounds)

	United States	Can.	Mexico	Peru	Belgium	France	Fed. Rep. of Germany	Great Britain	Italy	Netherlands	Norway	Spain	Yugoslavia	Japan	Australia	Rhodesia	Total
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)
1955																	
Total	1,031,018	257,008	61,879	18,943	233,623	123,623	197,024	90,917	77,761	31,202	49,724	26,244	15,175	122,965	113,221	31,248	2,534,457
1956																	
Total	1,062,954	255,601	62,136	10,428	251,906	124,105	204,961	90,784	80,407	32,123	53,170	25,224	15,434	153,821	117,445	32,396	2,630,883
1957																	
Total	1,574,500	247,356	62,354	35,772	259,701	148,455	202,627	85,348	81,179	32,786	52,787	24,279	30,256	152,145	123,587	33,040	2,691,699
1958																	
Total	892,607	254,661	18,354	34,685	257,540	177,422	210,408	80,494	5,955	2,841	54,423	26,750	34,446	166,883	128,548	39,508	2,464,639
1959																	
June	75,544	21,250	4,776	2,524	21,004	14,120	16,185	8,271	7,164	2,899	4,759	2,180	2,083	15,873	10,899	2,716	218,131
July	73,101	21,055	5,038	2,634	20,100	14,262	16,325	6,112	7,303	2,917	4,539	2,057	3,796	15,233	11,189	2,856	215,525
Aug.	69,768	21,588	4,965	2,504	19,472	14,138	16,585	6,507	7,370	2,968	4,646	2,196	3,355	15,308	11,298	2,812	211,964
Sept.	62,202	20,744	4,935	2,537	19,387	11,883	16,366	7,892	6,219	2,928	4,708	2,208	3,013	15,193	10,985	2,800	199,560
Oct.	63,938	21,744	5,084	2,545	20,512	18,228	17,054	8,557	6,403	2,967	3,570	2,245	....	....	10,904	2,800	....
Nov.	62,346	21,039	5,072	2,608	21,180	12,251	16,689	6,203	6,403	2,967	3,570	2,245	4,990	13,634	10,904	2,800	199,319
Dec.	69,666	21,963	5,330	2,578	21,810	12,807	17,336	7,772	6,519	3,201	3,074	2,331	....	15,141	11,305	2,906	....
1960																	
Jan.	73,326	22,426	5,278	2,608	21,957	12,675	17,409	7,250	6,781	2,786	4,743	2,402	3,178	15,498	11,023	2,707	220,587

U. K. Stocks of Zinc

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)

	Virgin Zinc		Zinc Conc.	
At start of:	1959	1960	1959	1960
Jan.	34,166	37,162	56,371	45,885
Feb.	34,805	48,337	58,518	41,547
Mar.	36,850	48,689	57,897	39,546
Apr.	38,457	51,064	52,151	44,250
May	38,643	54,491	47,936	47,486
June	37,713	52,470	41,954	47,595
July	38,297	52,004	45,640	54,044
Aug.	37,427	55,362	43,948	58,587
Sept.	40,358	53,583	42,385	63,312
Oct.	40,995	52,717	39,233	63,092
Nov.	35,994	49,817	38,948	62,497
Dec.	35,460	....	47,131	....

U. K. Zinc Imports

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 tons)

	Aug.	Sept.	Oct.
(Gross Weight)			
Zinc ore and concentrates	13,528	14,364	11,877
Zinc conc.*	10,546	7,434	†
Australia	8,721	3,211	...
Peru	588	597	...
Burma	1,127	1,324	...
Other countries	110	2,302	...
Zinc and zinc alloys	11,410	14,036	12,351
Australia	...	...	601
Canada	6,566	5,948	5,922
Belgium	1,208	1,446	1,305
Germany (W.)	...	1	...
Netherlands	96	100	20
Soviet Union	280	705	1,561
United States	711	3,437	1,542
Belgian Congo	1,450	1,450	600
Poland	100	100	200
Other countries	999	849	600

* British Bureau of Non-Ferrous Metal Statistics. The estimated zinc content is not the content of the gross weight as officially reported for any comparable period.
† Not available.

U. K. Copper Exports

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 tons)

	Aug.	Sept.	Oct.
Copper unwrought			
—ingots, blocks, slabs, bars, etc.	4,424	4,611	3,090
Plates, sheets, rods, etc.	1,249	2,128	4,162
Wire (including uninsulated electric wire)	154	194	293
Tubes	934	827	894
Other copper, worked (including pipe fittings)	54	126	104
Total	6,815	7,886	8,543

METALS, DECEMBER, 1960

Copper Consumption in United Kingdom

British Bureau of Non-Ferrous Metal Statistics

(In tons of 2,240 pounds)

	Unalloyed	Alloyed*	Total	Virgin	Scrap
1956 Total	388,167	251,312	639,479	500,794	138,685
1957 Total	407,326	234,158	641,484	507,493	133,991
1958 Total	442,977	225,007	667,978	534,619	133,359
1959					
July	24,714	19,858	44,572	32,034	12,538
August	24,524	16,097	40,621	30,866	9,755
September	35,447	21,920	57,367	45,178	12,189
October	37,221	23,880	61,101	47,345	13,756
November	37,463	23,392	60,855	47,031	13,824
December	36,044	23,202	59,246	44,753	14,493
Total	382,295	250,871	633,166	478,819	154,347
1960					
January	33,888	23,428	57,316	41,741	15,575
February	37,662	23,925	61,587	48,824	12,763
March	41,306	26,676	67,982	54,389	13,593
April	35,153	23,525	58,678	41,147	17,531
May	38,621	25,038	63,659	46,406	17,253
June	40,612	24,786	65,398	54,830	10,568
July	26,294	20,012	46,306	33,294	13,012
August	28,775	20,325	49,100	38,055	11,045
September	39,977	25,771	65,748	48,621	17,127
October	37,756	24,616	62,372	47,498	14,874

* Includes copper sulphate effective October, 1954.

U. K. Virgin Copper Stocks

(In long tons)

(British Bureau of Non-Ferrous Metal Statistics)

	At start of 1958	1959	1960
Jan.	91,477	64,184	55,005
Feb.	82,483	65,941	61,008
Mar.	89,147	65,875	55,979
Apr.	94,330	72,946	51,137
May	88,582	72,318	59,404
June	88,913	78,505	77,808
July	81,851	80,477	71,391
Aug.	84,756	81,986	98,083
Sept.	89,899	89,483	110,594
Oct.	85,092	77,803	110,300
Nov.	74,696	64,602	118,033
Dec.	69,023	60,936	....

U. K. Refined Lead Stocks

(British Bureau of Non-Ferrous Metal Statistics)

(In long tons)

	At start of 1958	1959	1960
Jan.	51,296	45,444	48,035
Feb.	49,134	48,102	44,290
Mar.	47,738	40,535	42,043
Apr.	40,547	53,289	41,248
May	37,509	62,286	50,363
June	34,608	63,135	45,657
July	40,518	57,810	46,542
Aug.	37,148	67,586	53,069
Sept.	43,758	66,048	59,595
Oct.	48,856	63,121	58,157
Nov.	40,216	56,697	60,218
Dec.	35,335	46,984	....

Zinc Imports and Exports By Principal Countries

(A. B. M. S.)

Reported in pigs, bars, etc.; metric tons except where otherwise noted.

	July	1960	Sept.
IMPORTS			
U. S.	3,692	8,134	17,272
Canada	2	....	....
Belgium	211	....	....
Denmark	849	939	1,763
France	1,979	1,412	938
Germany (W.)*	11,659	14,138	....
Italy	1,097	....	....
Netherlands	1,541	996	799
Sweden	1,274	2,008	....
Switzerland*	2,385	1,029	2,135
U. K.	12,642	11,410	14,036
India†	7,167	7,468	....
EXPORTS			
U. S.	2,386	7,601	9,110
Canada	11,433	15,730	14,310
Belgium	12,353	....	....
Denmark	300	184	652
France	546	532	564
Germany (W.)*	2,601	1,727	....
Italy	466	....	....
Netherlands	1,640	1,673	1,087
Norway	1,290	....	....
Switzerland*	10	22	11
U. K.†	726	577	1,516
N. Rhodesia†	2,448	2,516	2,551
Australia	3,292	2,967	....
Bel. Congo	N.A.	....	....

* Includes scrap.

† Includes manufactures.

British Bureau of Non-Ferrous Metal Statistics.
N.A.—Not yet available.

United Kingdom Tin Statistics

(British Bureau of Non-Ferrous Metal Statistics)

	Imports	Production*	Stock at end of period*	Imports	Production*	Consumption	Exports	Stock at end of period
1957 Total	39,272	1,028	....	9,834	34,175	20,365	7,362	71,931
1958 Total	27,419	1,090	....	13,195	32,551	20,413	20,398	19,054
1959								
September	2,990	115	2,132	33	2,229	2,093	3,742	10,624
October	2,259	108	1,851	24	3,101	1,915	1,986	10,383
November	3,936	90	3,317	25	2,513	1,861	1,997	10,545
December	2,161	117	2,941	15	2,858	1,997	1,513	11,523
Total	25,812	1,252	....	726	27,229	21,396	21,358	10,884
1960								
January	1,490	117	1,345	190	2,377	1,878	1,394	10,884
February	2,417	105	2,095	421	2,144	1,879	1,189	10,240
March	2,294	98	2,316	10	2,743	2,191	1,099	10,677
April	1,532	90	2,216	159	1,645	1,774	231	10,349
May	1,785	21	1,496	661	2,429	1,902	723	10,565
June	2,255	21	1,345	25	2,828	2,133	515	11,113
July	1,840	18	1,202	476	1,894	1,638	241	11,797
August	2,419	18	1,345	331	1,907	1,696	698	11,771

* As reported by International Tin Study Group. Production of Tin Metal includes production from imported scrap and residues refined on toll. Stocks exclude strategic stock but include official warehouse stocks.

Canada's Copper Output

(Dominion Bureau of Statistics)

(Primary Copper)

(In Tons)

	1957	1958	1959	1960
Jan. . .	25,469	32,868	24,664	36,404
Feb. . .	21,861	28,668	28,016	35,824
Mar. . .	27,663	29,239	32,427	38,904
Apr. . .	27,398	30,635	32,130	34,967
May . .	29,086	32,471	32,622	37,561
June . .	24,093	32,418	36,979	37,645
July . .	27,195	31,131	36,067	38,452
Aug. . .	26,943	30,867	35,045	37,996
Sept. .	24,633	27,546	35,740	34,558
Oct. . .	30,312	22,572	35,980	...
Nov. . .	27,331	20,368	35,271	...
Dec. . .	31,604	19,033	34,416	...
Year	323,588	346,816	399,362	

Canada's Copper Exports

(Dominion Bureau of Statistics)

(Ingots, bars, slabs and billets)

(In Tons)

	1957	1958	1959	1960
Jan. . .	20,582	26,883	10,620	29,046
Feb. . .	16,272	16,816	10,304	22,295
Mar. . .	14,270	18,662	11,025	20,338
Apr. . .	16,417	23,261	17,079	21,135
May . .	19,048	19,358	21,739	20,767
June . .	10,826	20,831	21,310	24,832
July . .	18,621	21,703	13,650	22,242
Aug. . .	21,980	15,881	15,155	30,357
Sept. .	14,314	15,373	21,077	19,253
Oct. . .	13,110	20,341	19,977	...
Nov. . .	16,622	14,391	23,172	...
Dec. . .	16,282	11,138	20,542	...
Year	198,794	224,638	198,010	...

Canada's Lead Output

(Dominion Bureau of Statistics)

(Recoverable Lead)*

(In Tons)

	1957	1958	1959	1960
Jan. . .	14,032	17,117	17,118	16,284
Feb. . .	15,170	14,908	15,923	16,397
Mar. . .	16,940	15,421	17,389	16,887
Apr. . .	14,275	15,644	16,237	16,266
May . .	14,591	15,131	16,813	16,558
June . .	16,431	15,645	14,968	17,534
July . .	14,377	14,076	15,111	18,039
Aug. . .	14,679	12,260	14,104	16,800
Sept. .	15,869	15,401	12,420	16,759
Oct. . .	14,151	14,564	13,958	...
Nov. . .	15,879	16,680	13,024	...
Dec. . .	15,296	18,248	14,545	...
Year	171,690	185,095	181,610	...

* New base bullion from Canadian ores plus recoverable lead in ores or concentrates shipped for export.

Canada's Lead Exports

(Dominion Bureau of Statistics)

(In Pigs)

(In Tons)

	1957	1958	1959	1960
Jan. . .	8,946	4,752	5,034	5,549
Feb. . .	6,633	1,553	6,377	6,692
Mar. . .	7,044	9,497	11,831	11,216
Apr. . .	7,314	7,450	7,836	5,407
May . .	9,676	7,764	12,230	6,979
June . .	7,210	4,036	15,610	9,521
July . .	4,682	12,629	3,478	7,955
Aug. . .	6,416	7,232	4,023	9,080
Sept. .	8,467	5,125	3,895	1,802
Oct. . .	7,761	10,320	4,885	...
Nov. . .	6,175	10,641	6,785	...
Dec. . .	4,217	11,352	10,218	...
Year	84,541	92,351	92,252	...

Canada's Zinc Output

(Dominion Bureau of Statistics)

(Refined Zinc)

(In Tons)

	1957	1958	1959	1960
Jan. . .	20,340	21,801	21,456	22,247
Feb. . .	19,808	19,743	19,709	21,055
Mar. . .	21,941	22,314	22,135	22,549
Apr. . .	20,504	20,986	21,512	21,391
May . .	20,564	21,269	21,147	21,701
June . .	19,928	20,353	21,250	21,294
July . .	20,061	20,873	21,055	20,860
Aug. . .	20,305	21,152	21,588	21,203
Sept. .	20,247	20,530	20,744	21,633
Oct. . .	20,892	21,125	21,744	...
Nov. . .	20,933	20,273	21,039	...
Dec. . .	21,823	21,705	21,963	...
Year	247,351	252,157	255,342	...

Canada's Zinc Exports

(Dominion Bureau of Statistics)

(Ore in Tons)

	1957	1958	1959	1960
Jan. . .	19,304	17,349	13,565	18,445
Feb. . .	16,618	8,376	12,675	12,995
Mar. . .	14,923	19,636	14,617	14,055
Apr. . .	17,131	16,346	12,789	13,344
May . .	16,680	15,121	11,049	12,460
June . .	16,157	7,776	20,298	10,113
July . .	12,912	27,394	23,122	18,540
Aug. . .	20,520	15,906	18,464	23,076
Sept. .	17,671	8,670	14,367	10,122
Oct. . .	16,735	22,810	12,518	...
Nov. . .	17,225	17,978	16,577	...
Dec. . .	16,131	18,344	11,043	...
Year	202,007	195,707	181,084	...

Canada's Silver Exports

(Dominion Bureau of Statistics)

(In ores and concentrates)

Fine Ounces)

	1958	1959	1960
Jan. . .	634,715	185,367	887,242
Feb. . .	208,149	329,742	1,312,006
Mar. . .	350,827	425,973	740,465
Apr. . .	284,971	989,593	809,500
May . .	376,082	564,017	491,805
June . .	438,253	871,570	545,610
July . .	529,770	728,598	752,373
Aug. . .	279,511	688,042	911,124
Sept. .	583,570	763,017	445,091
Oct. . .	323,475	767,939	.....
Nov. . .	217,892	70,205	.....
Dec. . .	871,573	430,802	.....
Year	5,098,788	6,210,175	.....

Canada's Silver Output

(Dominion Bureau of Statistics)

(In Ounces)

	1958	1959	1960
Jan. . .	2,529,583	3,094,440	2,755,069
Feb. . .	2,294,655	2,264,903	2,864,074
Mar. . .	2,448,698	2,782,307	2,739,583
Apr. . .	2,558,958	2,691,503	2,588,829
May . .	2,650,665	2,499,149	2,354,657
June . .	2,527,632	2,676,937	2,971,473
July . .	2,385,687	2,867,957	2,919,664
Aug. . .	2,884,154	2,519,033	2,650,110
Sept. .	2,856,304	2,446,846	2,543,349
Oct. . .	2,390,027	3,072,219	.....
Nov. . .	2,643,790	2,333,137	.....
Dec. . .	2,917,528	2,678,623	.....
Year	31,087,681	31,927,054	.....

Canada's Nickel Output

(Dominion Bureau of Statistics)

(In Tons)

	1957	1958	1959	1960
Jan. . .	16,609	16,710	8,047	17,399
Feb. . .	15,027	15,896	12,616	16,435
Mar. . .	16,733	15,853	14,922	17,780
Apr. . .	15,347	15,163	15,493	17,524
May . .	16,225	15,231	16,622	17,207
June . .	15,447	14,603	16,599	18,382
July . .	15,878	12,851	16,199	17,821
Aug. . .	16,756	12,597	16,784	19,142
Sept. .	15,604	11,786	16,205	18,185
Oct. . .	15,628	3,682	17,212	...
Nov. . .	14,587	3,178	16,904	...
Dec. . .	15,096	3,298	18,738	...
Year	188,962	140,842	186,341	...

METALS, DECEMBER, 1960

Canadian Copper Exports

(Dominion Bureau of Statistics)

	(In tons of 2,000 lbs.)		
	1960	1960	1960
	Aug.	Sept.	Oct.
Ore, matte, regulus, etc. (content)	3,778	9,014	4,246
United States	779	957	1,591
Belgium	158	...	158
Germany (W.)	158	...	158
Norway	2,441	1,186	1,446
U. Kingdom	242	153	71
Japan . . . . .	...	6,718	822
Ingot, bars, billets, anodes	30,356	19,253	19,918
United States	9,290	7,617	6,599
Belgium	667	780	275
France	1,966	331	846
Finland . . . . .	...	112	...
Germany (W.)	3,696	392	1,932
Italy	112	112	196
Netherlands	1,456	896	336
Portugal . . . . .	...	56	112
Sweden	224	...	...
Switzerland . . . . .	...	56	56
U. Kingdom	10,441	5,852	7,987
Yugoslavia	280	...	...
Australia	224	560	560
India	1,831	1,109	318
Japan	168	1,380	701
Other countries	1	...	...
Total Exports:			
Crude & refined	34,134	28,267	24,164
Old and scrap	1,496	832	997
Rods, strips, sheet & tubing	1,222	1,987	1,002

Canadian Zinc Exports

(Dominion Bureau of Statistics)

	(In tons of 2,000 lbs.)		
	1960	1960	1960
	Aug.	Sept.	Oct.
Ore (zinc content)	23,076	10,121	18,382
United States	17,021	10,121	11,109
Belgium	3,047	...	2,074
France	3,008	...	2,036
Germany (W.) . . . . .	...	...	2,169
Netherlands . . . . .	...	...	994
Slab Zinc	15,730	14,310	29,677
United States	5,822	10,932	4,594
Brazil . . . . .	...	...	110
Belgium	224	...	112
Germany (W.)	336	...	...
Netherlands	224	...	700
U. Kingdom	6,454	2,470	16,312
Korea	11	...	1,347
Hong Kong	248	...	50
Philippines	1,433	...	550
India	593	80	3,303
Pakistan . . . . .	...	...	64
Japan . . . . .	...	772	2,535
Thailand	385	...	...
Other countries . . . . .	...	56	...
Total Exports:			
Ore and slabs	38,806	24,431	48,059
Zinc scrap, dross, ashes	570	297	490
United States	112	109	72
Belgium	137	...	...
Germany (W.)	66	...	109
U. Kingdom	188	173	164
Japan	67	15	145

Canadian Lead Exports

(Dominion Bureau of Statistics)

	(In tons of 2,000 lbs.)		
	1960	1960	1960
	Aug.	Sept.	Oct.
Ore (lead content)	9,979	1,485	9,581
United States	2,075	1,485	1,682
Belgium	3,950	...	3,948
Germany (W.)	3,954	...	3,951
Refined lead	9,080	1,801	14,387
United States	3,295	20	2,330
U. Kingdom	3,609	896	9,179
Japan	1,823	787	2,671
Taiwan	187	...	66
Thailand	132	46	...
India . . . . .	...	...	118
Other countries	34	52	23
Total Exports:			
Ore & refined	19,059	3,286	23,968
Lead scrap	704	82	959

Copper Imports and Exports By Principal Countries

(A. B. M. S.)

Reported in ingots, slabs, etc.; metric tons except where otherwise noted.

	1960		
	July	Aug.	Sept.
IMPORTS			
U. S. (ore, etc.)	8,330	4,036	7,105
U. S. (blis.) s.t.	19,129	41,712	21,323
U. S. (ref.) s.t.	6,818	8,975	7,675
Belgium*	17,477	...	...
Denmark	21	408	602
France (crude) . . . . .	...	1,649	...
France (refined)	16,976	21,582	20,952
Italy	20,229	...	...
Germany (W.)	41,175	38,889	...
Netherlands	3,138	2,812	4,176
Norway	87	...	...
Sweden	10,327	6,826	...
Switzerland	2,568	3,360	3,564
U. K.	56,443	50,182	46,024
India (blister/refined)†	7,990	7,380	...
EXPORTS			
U. S. (ore & unrefined) s.t.	47	255	1,524
U. S. (ref.) s.t.	45,020	58,720	42,919
Canada (refined) s.t.	22,242	30,356	19,253
Chile (blis. and/or refined)	43,673	46,518	47,959
Belgium*	13,124	...	...
Germany (W.)	7,910	5,570	...
Norway	974	...	...
Sweden	2,809	712	...
U. K.	3,242	4,424	4,611
Belg. Congo†	N.A.	...	...
N. Rhodesia (blister and refined)†	47,801	43,846	37,756

* Includes alloys.
† Copper wire bars and ingot bars 99% and copper ingots 97%.
‡ British Bureau of Non-Ferrous Metal Statistics.
N.A.—Not yet available.

Canada's Nickel Exports

(Dominion Bureau of Statistics)

	(In Tons)			
	1957	1958	1959	1960
Jan.	14,260	14,233	6,757	21,443
Feb.	9,974	12,157	7,976	14,680
Mar.	14,958	12,316	14,006	19,072
Apr.	18,671	20,962	14,213	13,892
May	19,351	20,574	16,142	14,351
June	14,539	16,144	15,901	15,719
July	14,181	14,055	11,985	13,192
Aug.	14,966	13,012	13,664	21,493
Sept.	14,160	14,371	19,143	15,636
Oct.	13,370	8,885	...	...
Nov.	16,620	3,001	...	...
Dec.	14,606	5,060	...	...
Year	178,656	154,220	...	...

French Zinc Imports

(A. B. M. S.)

	(In metric tons)		
	1960	1960	1960
	July	Aug.	Sept.
Ore (gross weight)	26,385	20,810	27,642
Canada . . . . .	...	...	3,070
Peru	3,008	...	...
Belgium	1,954	1,862	1,703
Finland	2,000	...	570
Greece	1,232	1,990	...
Italy	7,651	...	3,000
Norway	1,568	1,402	...
Spain	675	3,015	5,099
Algeria	4,147	7,707	6,319
Morocco	4,150	4,834	3,170
Tunisia . . . . .	...	...	2,153
Belg. Congo . . . . .	...	...	2,558
Slabs, bars, blocks, etc.	1,412	938	1,078
Peru . . . . .	...	...	50
Belgium	860	785	498
Germany (W.)	20	20	20
Netherlands	532	...	...
Norway . . . . .	...	33	...
Russia . . . . .	...	...	510
Spain . . . . .	...	100	...

French Copper Imports

(A. B. M. S.)

	(In metric tons)		
	1960	1960	1960
	Aug.	Sept.	Oct.
Crude copper for refining blister, black and cement)	1,649	...	864
Belg. Congo	1,090	...	813
Rhodesia & Nyasaland	559	...	51
Refined	21,582	20,952	17,204
United States	4,933	9,794	3,989
Canada	1,531	1,479	754
Chile	3,254	983	851
Belgium	7,286	4,397	8,967
Germany, (W.)	252	133	182
Sweden	85	3	279
U. K. . . . .	...	21	4
Belg. Congo	1,962	2,621	400
Rhodesia-Nyasaland	2,152	1,503	1,778
Other countries	127	18	...

U. K. Copper Imports

(British Bureau of Non-Ferrous Metal Statistics)

	(In tons of 2,240 tons)		
	1960	1960	1960
	Aug.	Sept.	Oct.
(Gross Weight)			
Copper and copper alloys	50,182	46,024	45,496
U. of S. Africa	360	61	...
Rhodesia-Nyasaland	22,550	18,657	20,196
Canada	10,415	8,048	9,535
Belgium	251	301	2
Germany (W.)	86	155	776
Norway	201	201	50
United States	8,562	6,601	5,175
Chile	7,399	11,575	7,806
Peru	125	100	249
Belgian Congo . . . . .	...	...	298
Other countries	233	325	1,409
Of which:			
Electrolytic	38,892	31,162	32,436
Other refined	2,782	4,583	2,475
Blister or wrought	8,155	9,773	10,294
Wrought and alloys	353	506	291
Total	50,182	46,024	45,496

Nonferrous Castings

MONTHLY SHIPMENTS, BY TYPE OF METAL (Bureau of Census — Thousands of Pounds)

	Alu- minum	Copper	Mag- nesium	Zinc	Lead Die
1954 Total	607,764	834,557	25,572	474,741	18,396
1955 Total	833,058	1,011,748	27,892	781,254	21,045
1956 Total	801,136	966,473	36,168	88,069	20,734
1957 Total	751,856	875,389	30,322	663,330	23,791
1958 Total	596,816	739,915	27,228	508,297	18,920
1959					
May	68,268	78,413	2,370	60,656	2,025
June	66,471	79,730	2,484	56,128	2,007
July	56,911	67,073	2,265	46,756	1,858
August	55,904	68,979	2,243	46,566	1,898
September	66,193	76,045	2,263	58,144	2,218
October	67,499	79,832	2,436	59,214	2,068
November	54,557	70,674	2,023	46,270	1,755
December	64,939	73,558	2,163	60,652	1,346
Total	790,520	892,027	27,144	651,437	21,658
1960					
January	68,247	73,971	2,135	61,357	1,496
February	71,699	71,797	2,075	62,925	1,628
March	72,216	75,908	1,903	60,816	1,994
April	61,797	66,777	1,926	47,553	2,030
May	60,330	66,299	1,953	50,844	1,935
June	60,068	64,585	2,050	50,809	2,009
July	45,694	48,399	1,638	35,117	1,488
August	58,848	63,765	2,025	45,101	1,689
September	62,096	61,357	2,146	52,514	1,806

Copper Castings Shipments

BY TYPE OF CASTING (Bureau of Census) (Thousands of Pounds)

	Total	Sand	Permanent	Mold	Die	All Other
1952 Total	1,009,910	910,862	63,865	8,259	26,924	
1953 Total	990,496	888,369	61,316	10,077	30,734	
1954 Total	834,557	751,804	48,849	6,480	27,394	
1955 Total	1,011,748	907,852	63,041	8,541	31,408	
1956 Total	966,113	866,404	57,522	10,023	32,134	
1957 Total	875,389	789,819	44,746	10,776	30,048	
1958 Total	739,985	667,255	36,529	10,201	22,681	
1959						
March	78,641	69,472	4,333	1,361	3,475	
April	82,799	73,567	4,640	1,328	3,264	
May	78,413	69,351	4,363	1,291	3,408	
June	79,730	70,836	4,421	1,175	3,298	
July	69,073	61,650	3,869	946	2,608	
August	68,979	60,346	4,410	993	3,230	
September	76,045	66,517	4,810	1,138	3,580	
October	79,832	69,583	5,172	1,169	3,908	
November	70,674	61,490	4,893	1,160	3,131	
December	73,558	64,579	4,337	1,130	3,512	
Total	891,216	790,290	52,377	14,083	36,907	
1960						
January	73,971	65,742	3,915	1,371	2,943	
February	71,797	63,105	4,146	1,282	3,266	
March	75,908	66,517	4,346	1,381	3,664	
April	66,777	58,453	4,523	1,162	2,639	
May	66,299	57,848	4,463	1,153	2,835	
June	64,485	56,441	3,715	1,180	3,249	
July	48,399	42,778	2,910	929	1,854	
August	63,765	56,344	3,669	1,399	2,353	
September	61,357	54,099	3,699	929	2,630	

Nickel Averages

Electro, cathode sheets, 99.00%,
f.o.b. refinery, duty included
(Cents Per Pound)

	1957	1958	1959	1960
Jan.	74.00	74.00	74.00	74.00
Feb.	74.00	74.00	74.00	74.00
Mar.	74.00	74.00	74.00	74.00
Apr.	74.00	74.00	74.00	74.00
May	74.00	74.00	74.00	74.00
June	74.00	74.00	74.00	74.00
July	74.00	74.00	74.00	74.00
Aug.	74.00	74.00	74.00	74.00
Sept.	74.00	74.00	74.00	74.00
Oct.	74.00	74.00	74.00	74.00
Nov.	74.00	74.00	74.00	74.00
Dec.	74.00	74.00	74.00	...
Aver.	74.00	74.00	74.00	...

Platinum Averages

N. Y. MONTHLY QUOTATIONS
(Dollars per Troy Ounce)

	1957	1958	1959	1960
Jan.	101.92	77.85	52.57	80.00
Feb.	98.59	74.82	59.25	83.29
Mar.	93.50	72.096	77.10	83.00
Apr.	93.45	70.72	77.18	83.00
May	92.865	67.34	77.50	83.00
June	92.02	66.18	77.50	83.00
July	90.265	64.35	78.00	83.00
Aug.	84.426	60.94	78.00	83.00
Sept.	84.00	59.50	78.00	83.00
Oct.	84.00	57.327	78.00	83.00
Nov.	83.80	56.41	78.44	83.00
Dec.	78.70	53.154	78.50	...
Aver.	89.79	65.07	74.17	...

Spot Straits Tin

(Straits, Open Market, N. Y.)

Monthly Average Prices

	1957	1958	1959	1960
Jan.	101.511	92.94	99.411	99.863
Feb.	101.132	93.915	102.785	101.178
Mar.	99.643	94.452	103.042	100.228
Apr.	99.304	93.988	102.505	99.25
May	93.347	94.512	103.125	99.554
June	98.05	94.708	104.25	101.377
July	96.52	94.898	102.337	103.588
Aug.	94.261	94.988	102.333	102.864
Sept.	93.406	94.101	102.44	102.381
Oct.	91.838	96.523	102.238	103.469
Nov.	89.236	99.118	101.021	103.368
Dec.	92.35	98.989	99.176	...
Aver.	96.301	95.177	102.055	...

Prompt Tin Prices

(Straits, Open Market, N. Y.)

Monthly Average Prices

	1957	1958	1959	1960
Jan.	101.347	92.653	99.351	99.863
Feb.	100.257	93.763	102.708	100.987
Mar.	99.476	94.363	103.042	100.098
Apr.	99.288	92.988	102.505	99.25
May	98.335	94.512	103.107	99.548
June	98.025	94.619	104.142	101.318
July	96.44	94.892	102.337	103.525
Aug.	94.159	94.976	102.345	102.853
Sept.	93.313	94.054	102.435	102.256
Oct.	91.848	96.455	102.238	103.319
Nov.	89.236	98.985	100.972	102.355
Dec.	92.34	98.96	99.176	...
Aver.	93.672	95.069	102.03	...

Quicksilver Averages

N. Y. Monthly Averages
Virgin, Dollars per 76-lb Flask

	1957	1958	1959	1960
Jan.	256.00	224.35	219.50	211.30
Feb.	256.00	229.39	219.50	212.68
Mar.	256.00	232.096	223.57	214.00
Apr.	256.00	233.06	239.52	214.00
May	256.00	229.48	245.86	214.00
June	256.00	229.00	241.64	212.00
July	256.00	230.25	236.74	210.00
Aug.	252.20	240.27	232.524	209.74
Sept.	248.58	241.12	225.429	209.00
Oct.	234.48	235.94	224.548	209.00
Nov.	228.33	230.05	217.944	209.00
Dec.	226.50	223.54	215.05	...
Aver.	248.51	230.96	228.49	...

METALS, DECEMBER, 1960

Primary Aluminum Output, Shipments and Stocks

(U. S. Department of Interior)					
	Stocks beginning of month short tons	Production short tons	Sold or Used— Short tons	Value f. o. b. plant	Stocks end of month short tons
1958 Total	.....	1,565,556	1,595,067	.....	.....
1959					
July	88,612	179,194	187,387	91,635,864	80,419
August	80,419	172,816	159,206	77,711,678	94,029
September	94,029	168,206	153,170	74,809,052	109,065
October	109,065	173,742	151,683	73,293,070	131,124
November	131,124	153,665	152,024	74,247,828	132,765
December	132,765	162,996	184,123	89,712,146	111,638
Total	.....	1,953,017	1,987,465	.....	.....
1960					
January	111,638	164,023	148,129	\$73,424,794	127,352
February	127,352	156,825	167,215	83,087,192	117,142
March	117,142	170,688	172,846	88,761,065	114,984
April	114,984	168,596	144,469	73,561,622	139,111
May	139,111	175,863	166,403	85,418,807	148,571
June	148,571	171,356	149,917	76,925,639	170,010
July	170,010	177,564	143,948	73,173,364	203,626
August	203,626	172,973	164,883	84,495,902	211,716
September	211,716	162,882	148,724	76,221,049	225,874

Aluminum Wrought Products

PRODUCERS' MONTHLY NET SHIPMENTS
(Bureau of Census — Thousands of Pounds)

	Total	Sheet, Plate, Foil, Rod & Bar	Wire & Cable	Extruded Shapes & Tubing	Powder & Paste
1955 Total	2,805,500	1,542,868	365,391	812,311	35,854
1956 Total	2,870,101	1,577,601	398,602	782,398	28,017
1957 Total	2,677,423	1,396,502	399,040	789,430	28,187
1958 Total	2,624,911	1,441,385	285,355	821,249	25,742
1959					
June	341,389	195,476	30,156	107,038	3,901
July	373,060	211,850	39,902	111,661	4,708
August	247,833	126,512	29,411	85,380	2,537
September	262,749	140,313	25,843	89,986	2,419
October	287,081	154,669	27,614	97,478	2,697
November	247,260	136,516	20,528	83,594	2,304
December	268,155	152,007	24,210	84,504	2,606
Total	3,397,705	1,894,159	321,824	1,075,373	34,843
1960					
January	250,116	141,060	22,475	78,674	3,370
February	256,017	147,026	22,626	79,268	2,435
March	267,149	152,580	24,682	82,584	2,180
April	247,382	139,762	24,026	76,838	2,227
May	268,228	156,542	25,218	84,202	2,266
June	274,173	157,006	29,114	84,664	3,389
July	247,590	149,221	24,813	70,786	2,770
August	253,111	141,138	27,065	77,596	3,081
September	262,036	146,984	28,293	79,685	3,612

Aluminum Castings Shipments

(Bureau of Census)

BY TYPE OF CASTING

(Thousands of Pounds)	Permanent				All Other
	Total	Sand Mold	Die	Die	
1954 Total	609,066	155,738	213,968	232,726	6,800
1955 Total	833,058	171,757	298,115	354,804	8,282
1956 Total	801,036	171,763	245,421	376,108	7,736
1957 Total	751,656	144,121	232,326	369,086	...
1958 Total	596,790	117,421	186,949	292,599	...
1959					
June	66,471	12,306	24,927	29,092	...
July	56,911	11,581	20,410	24,786	...
August	55,904	11,130	17,824	26,818	...
September	66,193	12,309	21,506	32,239	...
October	67,499	12,958	21,781	32,640	...
November	54,557	10,813	16,326	27,303	...
December	64,939	12,409	19,902	32,523	...
Total	772,212	142,131	262,179	346,589	...
1960					
January	68,247	11,278	22,368	34,514	...
February	71,699	11,800	23,614	36,177	...
March	72,216	12,934	22,413	36,749	...
April	61,797	12,339	19,950	29,400	...
May	60,068	11,280	20,953	27,722	...
June	45,669	8,735	15,804	20,978	...
July	45,694	8,765	15,804	20,973	...
August	58,848	10,639	18,901	29,256	...
September	62,096	10,514	22,031	29,527	...

METALS, DECEMBER, 1960

Virgin Aluminum*

Unalloyed Ingot (50-lb.),
99½% min., f.o.b.

Monthly Average Prices
(Cents Per Pound)

	1957	1958	1959	1960
Jan.	27.10	28.10	26.80	28.10
Feb.	27.10	28.10	26.80	28.10
Mar.	27.10	28.10	26.80	28.10
Apr.	27.10	26.10	26.80	28.10
May	27.10	26.10	26.80	28.10
June	27.10	26.10	26.80	28.10
July	27.10	26.10	26.80	28.10
Aug.	28.70	26.77	26.80	26.00
Sept.	28.10	26.80	26.80	26.00
Oct.	28.10	26.80	26.80	26.00
Nov.	28.10	26.80	26.80	26.00
Dec.	28.10	26.80	27.361	....
Aver.	27.517	26.889	26.847	....

* Price of 28.10c prior to Aug. 1, 1960, based on primary 30-lb. ingot, 99½% plus.

Magnesium Wrought Products Shipments

(Bureau of Census)

(Thousands of Pounds)

	1957	1958	1959	1960
Jan.	2,130	1,271	1,271	1,535
Feb.	2,522	1,280	1,691	1,724
Mar.	2,388	1,398	1,717	1,966
Apr.	2,511	1,479	2,089	1,790
May	2,230	1,443	1,644	1,989
June	1,881	1,709	1,946	1,742
July	1,428	1,227	1,681	1,526
Aug.	1,540	1,823	1,823	1,853
Sept.	1,501	1,807	1,807	2,288
Oct.	1,453	1,983	2,220	....
Nov.	1,230	1,662	1,320	....
Dec.	1,102	1,622	1,675	....
Total	21,915	18,702	20,884	....

Cadmium Averages

(Cents Per Pound)

N. Y. Monthly Averages
Cents per lb. in ton lots

	1957	1958	1959	1960
Jan.	170.00	155.00	145.00	148.50
Feb.	170.00	155.00	145.00	150.00
Mar.	170.00	155.00	145.00	150.00
Apr.	170.00	155.00	120.00	150.00
May	170.00	155.00	120.00	150.00
June	170.00	155.00	120.00	150.00
July	170.00	155.00	120.00	150.00
Aug.	170.00	155.00	120.00	150.00
Sept.	170.00	152.60	120.00	151.43
Oct.	170.00	145.00	*140.00	160.00
Nov.	170.00	145.00	140.00	160.00
Dec.	166.40	145.00	140.00	....
Aver.	169.70	152.30	132.00	....

* As of Oct. 1, 1959, for lots of up to one ton.

Steel Ingot Production

(American Iron and Steel Institute)

Period	Estimated Production — All Companies				Calculated weekly production, all companies			
	OPEN HEARTH		BESSEMER		ELECTRIC		TOTAL	
	Net tons	% of capacity	Net tons	% of capacity	Net tons	% of capacity	Net tons	% of capacity
1954 Total	80,327,494	73.6	2,548,104	53.2	5,436,054	52.0	88,311,652	71.0
1955 Total	102,840,585	91.6	3,227,997	67.4	9,147,567	81.2	115,216,149	89.8
1957 Total	101,657,776	87.0	2,475,138	54.9	8,582,082	71.3	112,714,996	84.5
1958								
Total	75,888,392	62.0	1,896,348	34.7	7,972,623	55.4	85,257,363	69.6
1959								
Jan.	9,521,053	91.6	185,794	63.2	941,056	84.8	10,907,634	89.9
Feb.	4,549,182	42.2	66,453	21.9	526,025	45.9	5,227,129	41.7
March	1,171,342	10.9	.....	.....	267,935	23.4	1,439,277	11.5
April	1,249,398	12.0	.....	.....	285,619	25.8	1,535,017	12.7
May	1,385,490	12.9	.....	.....	319,043	27.8	1,704,533	13.6
June	6,290,659	60.5	92,361	31.4	754,793	68.0	7,267,607	52.9
July	10,468,534	92.4	205,666	67.7	1,033,658	90.2	11,908,319	95.6
August	8,168,997	64.5	1,880,283	38.6	5,532,514	63.2	93,446,132	63.3
1960								
Jan.	10,510,616	97.7	211,132	73.2	1,046,675	85.6	12,049,404	95.5
Feb.	9,713,527	94.0	216,265	80.2	949,588	83.0	11,126,806	94.3
March	10,103,122	93.9	202,312	70.3	952,008	77.9	11,556,433	91.6
April	8,693,305	82.7	105,336	37.7	766,452	64.8	9,777,857	80.1
May	7,844,140	72.9	78,010	25.3	603,817	49.4	8,830,472	70.0
June	6,439,000	61.9	80,000	28.7	560,000	47.3	7,399,000	60.6
July	5,494,331	51.1	61,700	21.4	505,890	41.4	6,350,924	50.3
August	5,860,394	54.5	52,652	18.3	645,404	52.8	6,838,000	54.2
September	5,525,244	53.1	42,228	15.1	603,626	51.0	6,458,421	52.9
October	5,917,780	55.0	56,914	19.7	623,236	51.0	6,868,380	54.4
November	5,309,090	51.0	51,000	18.3	550,000	46.5	6,167,000	50.5

Steel Ingot Operations

(Percentage of Capacity as Reported by American Iron & Steel Institute)

Week	Beginning	1957	1958	1959	1960
Jan. 4...	98.4	56.1	76.2	95.3	
Jan. 11...	96.4	57.0	73.6	95.7	
Jan. 18...	96.6	55.5	74.6	95.4	
Jan. 25...	97.6	54.0	72.6	94.2	
Feb. 1...	97.1	54.0	76.9	94.3	
Feb. 8...	97.7	53.5	83.8	95.7	
Feb. 15...	97.8	50.9	83.7	93.8	
Feb. 22...	96.0	54.6	88.5	94.4	
Feb. 29...	97.1	53.1	90.3	92.8	
Mar. 7...	93.8	52.4	92.0	93.1	
Mar. 14...	93.5	52.5	92.9	91.5	
Mar. 21...	92.4	50.6	92.9	91.1	
Mar. 28...	90.6	48.6	93.2	88.7	
Apr. 4...	90.3	48.5	93.3	84.8	
Apr. 11...	90.4	46.8	93.8	78.1	
Apr. 18...	88.7	47.9	93.5	78.5	
Apr. 25...	87.0	47.8	94.2	77.6	
May 2...	86.7	49.4	92.0	75.0	
May 9...	84.2	52.3	92.9	73.8	
May 16...	86.4	56.4	93.4	71.3	
May 23...	88.0	58.1	93.6	65.6	
May 30...	87.5	62.5	93.7	60.6	
June 6...	86.5	84.0	92.0	61.6	
June 13...	85.2	64.9	92.5	62.3	
June 20...	84.0	61.7	87.8	61.0	
June 27...	78.5	51.0	78.2	53.0	
July 4...	78.7	53.4	79.5	42.2	
July 11...	79.3	54.9	38.7	51.8	
July 18...	79.4	57.3	12.9	54.4	
July 25...	79.4	57.8	12.2	53.3	
Aug. 1...	79.8	58.8	11.2	53.9	
Aug. 8...	80.6	60.5	11.8	53.5	
Aug. 15...	82.1	62.6	11.3	54.7	
Aug. 22...	82.2	63.5	11.7	54.3	
Aug. 29...	81.0	61.7	11.5	52.0	
Sept. 5...	81.9	65.9	11.6	49.2	
Sept. 12...	82.1	65.6	12.6	53.0	
Sept. 19...	82.2	67.3	12.8	54.3	
Sept. 26...	82.6	70.4	12.8	54.7	
Oct. 3...	82.8	71.6	12.8	53.4	
Oct. 10...	80.9	74.2	13.0	55.4	
Oct. 17...	80.2	74.8	13.1	55.4	
Oct. 24...	79.7	75.0	13.1	51.7	
Oct. 31...	78.0	74.5	13.0	51.9	
Nov. 7...	77.7	74.5	45.6	51.5	
Nov. 14...	76.0	74.1	78.9	51.6	
Nov. 21...	72.1	73.7	89.7	48.0	
Nov. 28...	71.5	73.5	93.6	48.9	
Dec. 5...	69.2	73.5	96.5	49.0	
Dec. 12...	67.7	74.5	96.3	...	
Dec. 19...	53.7	74.5	94.9	...	
Dec. 26...	59.0	73.6	96.3	...	

Blast Furnace Output

(American Iron and Steel Institute)

Period	Net tons	Pig Iron	Iron	Total Capacity	%
1951					
Ttl. Yr.	70,487,889	745,381	71,232,761	98.3	
1952					
Ttl. Yr.	81,528,665	829,926	82,188,891	84.3	
1953					
Total	74,987,721	855,038	75,842,759	95.5	
1954					
Total	58,119,832	568,736	58,688,117	71.6	
1955					
Total	77,114,073	868,758	77,982,831	92.7	
1956					
Total	75,301,134	664,341	75,965,475	88.9	
1957					
Total	78,557,011	782,660	79,339,671	91.4	
1958					
Jan.	4,048,328	25,468	4,073,796	52.7	
Feb.	4,396,285	26,463	4,422,748	59.1	
March	4,277,515	26,668	4,304,183	55.7	
April	4,799,955	31,374	4,831,329	62.1	
May	5,041,042	31,348	5,072,390	67.8	
June	5,835,996	36,963	5,872,959	76.0	
July	5,907,888	39,275	5,947,163	79.5	
August	6,025,385	47,506	6,072,891	78.6	
September	5,729,644	465,456	37,298,644	63.5	
1959					
Jan.	6,260,395	48,572	6,311,823	77.9	
Feb.	6,047,398	45,274	6,192,672	85.3	
March	7,461,760	48,291	7,510,051	93.4	
April	7,338,372	54,234	7,392,606	95.0	
May	7,683,759	64,237	7,747,996	96.4	
June	7,231,631	58,315	7,289,946	93.7	
July	3,550,159	23,391	3,573,550	44.5	
August	.....	.....	947,779	11.8	
September	.....	.....	949,103	12.2	
October	.....	.....	1,017,659	12.7	
November	4,199,101	20,172	4,219,273	54.2	
December	7,638,359	65,728	7,704,087	95.0	
1960					
Jan.	7,753,753	76,344	7,830,097	95.5	
Feb.	7,342,469	71,533	7,414,002	.....
March	7,713,696	79,715	7,793,411	95.1	
April	8,770,229	69,864	8,840,093	86.1	
May	6,030,992	63,419	6,094,411	78.0	
June	5,261,171	48,316	5,309,487	66.9	
July	4,480,144	43,353	4,523,497	55.2	
August	4,469,505	27,608	4,497,113	54.9	
September	4,125,379	17,763	4,143,142	52.0	
October	4,472,615	38,204	4,510,819	55.0	
November	4,138,356	36,509	4,174,865	52.6	

Steel Castings Shipments

(Bureau of Census)

Period	Total	For Sale	For Own Use
1951	2,101,604	1,507,413	594,191
1952	1,925,116	1,476,352	448,767
1953	1,829,277	1,290,016	431,330
1954	1,184,096	880,158	303,938
1955	1,530,694	1,166,706	363,988
1956	1,931,987	1,512,290	416,697
1957			
Total	1,766,191	1,261,301	406,444
1958			
Aug.	80,886	59,816	21,070
Sept.	85,277	64,586	20,691
Oct.	95,389	73,367	22,022
Nov.	85,267	65,788	19,479
Dec.	103,800	81,360	22,440
Total	1,114,939	859,125	255,814
1959			
Jan.	105,392	82,693	22,709
Feb.	110,280	86,013	24,267
Mar.	131,317	103,848	27,469
Apr.	134,344	104,890	29,454
May	135,359	105,804	29,555
June	143,624	111,725	31,899
July	106,790	83,541	23,249
Aug.	98,014	79,188	18,826
Sept.	99,731	79,963	19,768
Oct.	105,570	84,850	20,720
Nov.	109,460	86,026	23,434
Dec.	103,800	81,360	22,440
Total	1,023,861	919,181	294,430
1960			
Jan.	122,565	94,052	28,513
Feb.	129,259	97,927	31,332
Mar.	143,708	109,688	34,020
Apr.	127,219	96,557	30,662
May	126,580	97,231	29,349
June	136,992	107,076	29,916
July	89,565	67,924	22,271
Aug.	101,709	77,146	24,563
Sept.	104,298	79,556	24,742

Galvanized Sheet Shipments

(American Iron & Steel Institute)

Period	1957	1958	1959	1960
Jan.	2,590,2	186,649	279,244	323,073
Feb.	205,048	167,627	281,637	289,583
Mar.	206,236	196,885	311,961	329,395
Apr.	198,585	206,368	328,759	295,627
May	206,657	231,318	317,059	288,162
June	239,037	277,180	350,333	275,974
July	167,247	239,888	180,787	239,036
Aug.	186,790	253,263	N.A.	227,983
Sept.	183,952	258,723	N.A.	215,356
Oct.	212,886	290,157	N.A.	210,162
Nov.	190,580	253,909	196,644	.....
Dec.	189,363	246,472	301,911	.....
Total	2,392,637	2,328,848	2,772,835	.....

N.A.—Not available.

SHIPMENTS OF TIN-TERNEPLATE

(American Iron & Steel Institute)

Period	Hot Dipped—	Electrolytic—
	1959	1959
Jan.	30,304	32,525
Feb.	24,602	29,385
Mar.	46,705	38,131
Apr.	54,906	37,106
May	64,110	37,705
June	62,965	51,810
July	36,381	42,074
Aug.	N.A.	38,599
Sept.	N.A.	28,610
Oct.	N.A.	22,971
Nov.	21,782
Dec.	31,487	

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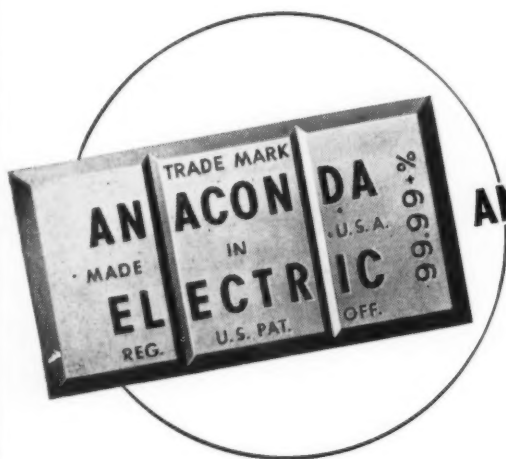
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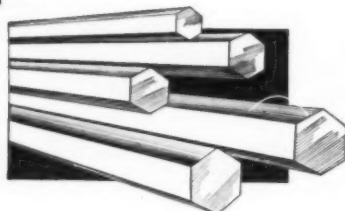
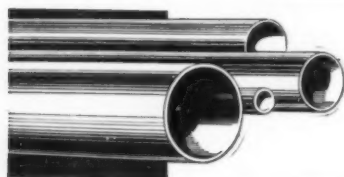
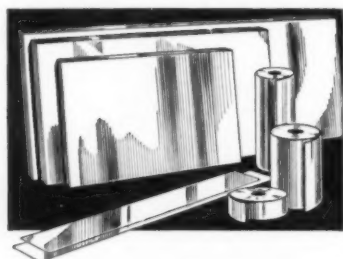
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